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11

12 UNITED STATES DISTRICT COURT
13 NORTHERN DISTRICT OF CALIFORNIA
14 SAN FRANCISCO DIVISION
15

16 IN RE SEAGATE TECHNOLOGY, LLC
LITIGATION

Case No. 3:16-cv-00523 JCS

17
18 CONSOLIDATED ACTION
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**DECLARATION OF ITAMAR
SIMONSON, Ph.D. IN SUPPORT OF
SEAGATE TECHNOLOGY LLC'S
OPPOSITION TO PLAINTIFFS'
MOTION FOR CLASS CERTIFICATION**

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22 **REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED**
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1 I, Itamar Simonson, Ph.D., hereby declare as follows:

2 1. I am the Sebastian S. Kresge Professor of Marketing at the Graduate School of
3 Business, Stanford University. A copy of my curriculum vitae, which includes a complete list of
4 my publications, is attached as Exhibit A.

5 2. I hold a Ph.D. in Marketing from Duke University, Fuqua School of Business, a
6 Master's degree in business administration (MBA) from the UCLA Graduate School of
7 Management, and a Bachelor's degree from The Hebrew University with majors in Economics
8 and Political Science.

9 3. I have received many awards, including (a) the award for the Best Article published
10 in the *Journal of Consumer Research* (the major journal on consumer behavior) between 1987 and
11 1989; (b) The Ferber Award from the Association for Consumer Research, which is the largest
12 association of consumer researchers in the world; (c) An Honorary Doctorate of the University of
13 Paris – Sorbonne Universities; (d) the 1997 O'Dell Award, given for the *Journal of Marketing*
14 *Research* (the major journal on marketing research issues) article that has had the greatest impact
15 on the marketing field in the previous five years; (e) the 2001 O'Dell award (and a finalist for the
16 O'Dell Award in 1995, 2002, 2004, 2005, 2007, 2008, and 2012); (f) the award for the Best
17 Article published in the *Journal of Public Policy & Marketing* (the main journal on public policy
18 and legal aspects of marketing) between 1993 and 1995; (g) the 2007 Society for Consumer
19 Psychology Distinguished Scientific Achievement Award; (h) Elected Fellow of the Association
20 for Consumer Research; (i) the 2002 American Marketing Association award for the Best Article
21 in the area of services marketing; (j) the 2016 Association for Consumer Research Conference
22 Best Paper Award, and (k) I was a winner in a competition dealing with research on the
23 effectiveness of direct marketing programs, which was organized by the Direct Marketing
24 Association and the Marketing Science Institute. In addition to these awards, my research has
25 been widely cited by other researchers in the marketing, consumer behavior, and other fields,¹ and
26

27 ¹ See, e.g., *Profile of Itamar Simonson*, Google Scholar, https://scholar.google.com/citations?view_op=search_authors&mauthors=itamar+simonson&hl=en&oi=ao (last visited Jan. 3, 2018).

1 my publication record has been ranked as one of the most prolific and influential.² My articles
2 have also been relied upon by various courts.³

3 4. At Stanford University I have taught MBA and executive courses on Marketing
4 Management, covering such topics as buyer behavior, developing marketing strategies, building
5 brand equity, advertising, sales promotions, and retailing. This past Spring I taught an MBA
6 course regarding “Applied Behavioral Economics.” I also taught an MBA course on Marketing to
7 Businesses and a course on High Technology Marketing. In addition to teaching MBA courses, I
8 have guided and supervised numerous MBA student teams in their work on company and industry
9 projects dealing with a variety of markets.

10 5. I have taught several doctoral courses. One doctoral course examines methods for
11 conducting consumer research. It focuses on the various stages involved in a research project,
12 including defining the problem to be investigated, selecting and developing the research approach,
13 data collection and analysis, and deriving conclusions. A second doctoral course that I have
14 taught focused on buyer behavior, covering such topics as buyer decision-making processes,
15 influences on purchase decisions, and persuasion. A third doctoral course that I have taught deals
16 with buyer decision-making. Prior to joining Stanford University, during the six years that I was
17 on the faculty of the University of California at Berkeley, I taught an MBA Marketing
18 Management course, a Ph.D. course on buyer behavior, and a Ph.D. course on buyer decision-
19 making. I also taught in various executive education programs, including a program for marketing
20 managers in high technology companies.

21 6. After completing my MBA studies and before starting the Ph.D. program, I worked
22 for five years in a marketing capacity in a subsidiary of Motorola Inc., serving in the last two years
23

24 ² See, e.g., S. Seggie & D. Griffith, *What does it take to get promoted in marketing academia? Understanding exceptional publication productivity in the leading marketing journals*, J. of Marketing, 73, 122-132 (2009).

25 ³ 4 J. Thomas McCarthy, *McCarthy on Trademarks & Unfair Competition* § 32:174 (2007); *Simon Prop. Group L.P.*
26 *v. MySimon, Inc.*, 104 F. Supp. 2d 1033 (S.D. Ind. 2000); *Malletier v. Dooney & Bourke, Inc.*, 525 F. Supp. 2d 558,
27 626 n.210 (S.D.N.Y. 2007); *Kargo Global, Inc. v. Advance Magazine Publishers, Inc.*, No. 06 Civ. 550 (JFK), 2007
28 WL 258688 (S.D.N.Y. Aug. 6, 2007); *THOIP v. The Walt Disney Co.*, No. 08 Civ. 6823, 690 F. Supp. 2d 218
(S.D.N.Y. 2010); *Starbucks Corp. v. Lundberg*, No. CV.02-948-HA, 2005 WL 6036699, at *3 (D. Or. May 25, 2005);
TCL Comm’n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson, No. CV 15-2370 JVS (DFMx), 2017 WL
6611635, at *29 (C.D. Cal. Dec. 12, 2017).

1 as the product marketing manager for two-way communications products. My work included (a)
 2 defining new products and designing marketing plans for new product introductions, (b) customer
 3 and competitor surveys and analysis, and (c) sales forecasting.

4 7. I have conducted, supervised, or evaluated well over 2,000 marketing research
 5 studies, including many related to consumer behavior and information processing, branding,
 6 marketing strategies, and advertising-related issues. I have also studied topics related to the
 7 psychology and measurement of trademark infringement. For example, I co-authored a chapter on
 8 “Demand Effects in Likelihood of Confusion Surveys,” in the ABA-published book entitled
 9 *Trademark and Deceptive Advertising Surveys*.⁴ I serve on eight editorial boards, including
 10 leading journals such as the Journal of Consumer Research, Journal of Marketing Research, and
 11 the Journal of Consumer Psychology. I am also a frequent reviewer of articles submitted to
 12 journals in other fields, such as psychology, decision-making, and economics. I received (twice)
 13 the Outstanding Reviewer Award from the *Journal of Consumer Research*. As a reviewer, I am
 14 asked to evaluate the research of scholars wishing to publish their articles in leading scholarly
 15 journals.

16 8. I have also worked as a consultant for companies and organizations on a variety of
 17 marketing and buyer behavior topics. And I have served as an expert in prior litigations involving
 18 various marketing and buyer behavior issues, class actions, trademark-related matters, false
 19 advertising, branding, and other areas. A list of cases in which I provided sworn testimony during
 20 the past four years is included in Exhibit B. I am being compensated at my standard rate of \$750
 21 per hour. My compensation is not dependent on the opinions that I provide or the outcome of this
 22 litigation.

23 9. I was asked by counsel for Seagate Technology LLC (“Seagate”) (a) to conduct a
 24 survey to determine the impact, if any, of presenting consumers with a data sheet, which describes
 25 the hard drive (HD) at issue as having an annualized failure rate (AFR) of less than 8% as opposed
 26

27 ⁴ Itamar Simonson & Ran Kivetz, American Bar Association, *Demand Effects in Likelihood of Confusion Surveys*,
 28 *Trademark and Deceptive Advertising Surveys* ch. 11 (Shari Diamond & Jerre Swann, eds., 2012).

1 to less than 1%,⁵ alongside other HD attributes, and (b) to evaluate Mr. Boedeker's report.⁶ After
 2 presenting a summary of my conclusions, I describe the survey that I designed and supervised
 3 followed by my evaluation of Mr. Boedeker's report. Documents that I reviewed in connection
 4 with my work in this case are listed in Exhibit C.

5 **SUMMARY OF CONCLUSIONS**

6 **A Survey to Assess the Impact of AFR (Presented Alongside Other Product Features)** 7 **on Purchase Intentions**

8 10. The survey that I designed and supervised tested experimentally the impact of
 9 presenting to hard drive (HD) purchasers a data sheet like the one actually used by Seagate, but
 10 with the Annualized Failure Rate (AFR) increased from "Less than 1%" to "Less than 8%." Over
 11 400 consumers participated in the survey. The survey used a standard experimental design that
 12 included a Test group that was contrasted with a Control group (similar to a Test versus a Placebo
 13 group in medical research). Aside from the AFR value, all other presented features were identical
 14 in the Test and Control descriptions of the tested hard drive.

15 11. The survey was particularly conservative (i.e., favorable to Plaintiffs' claims)
 16 because, unlike most purchasers (for example, brick-and-mortar store shoppers at places such as
 17 Best Buy, as well as many online shoppers at sites like Amazon) who were unlikely to search for
 18 the data sheet and were therefore not exposed to and influenced by the indicated AFR, all
 19 participants in my survey were shown the AFR as it could be seen on the product's data sheet.
 20 The data sheet was available for respondents to view again while answering the survey questions.

22 ⁵ It is my understanding that the highest AFR Plaintiffs' technical expert has cited in connection with any of the HDs
 23 at issue is [REDACTED], based on Seagate's internal testing before the drive development was completed, and before the
 drives were released for sale to consumers.

24 ⁶ After reviewing Mr. Boedeker's report and deposition testimony, it was unnecessary to analyze the impact of RAID
 25 representations as Mr. Boedeker concedes that RAID and NAS are "far less" valuable to respondents than AFR, and
 26 "when modelling false advertising with respect to AFR, RAID and NAS combined, the impact of RAID and NAS is
 27 small" such that "the incremental impact of RAID and NAS on economic losses falls within the bounds of the
 28 confidence interval for economic losses related to AFR." Boedeker Declaration, p. 145 at Figure 20 and 158;
 Boedeker Depo. at 284: 11-21 ("My study actually showed that a RAID NAS feature . . . actually was not very
 important and the numbers showed it.") Stated another way, Mr. Boedeker concludes that the incremental effect
 RAID and NAS representations in connection with AFR falls within the margin of error for AFR alone such that it
 cannot be said RAID and NAS are material to customers' purchasing decisions. *Id.* ¶ Accordingly, my analysis
 focuses on explaining the deficiencies in his report with regard to AFR.

1 12. To assess the impact of a higher AFR value (while also considering other features
2 that actual buyers were exposed to), respondents were asked to indicate the likelihood of buying
3 the presented HD. The question employed the standard intention-to-buy scale. Respondents were
4 also asked to explain their answers. The final two survey questions asked respondents about the
5 uses of their HDs as well as their purchase criteria when deciding which HD they wish to buy.

6 13. The survey results showed that those who considered the higher AFR were not less
7 (or more) likely to buy the product. As their explanations further showed, their main focus was on
8 other attributes such as capacity, ease of use, size, and brand. The survey results also showed a
9 great diversity of HD uses and purchase criteria.

10 **AN EVALUATION OF MR. BOEDEKER'S REPORT**

11 14. Mr. Boedeker (Report, page 5) described his assignment as developing an
12 economic loss model estimating the “class-wide damages to purchasers of Seagate products with
13 the alleged misstatements.” I evaluated this “model” based on basic principles and accepted
14 standards regarding consumer decision-making and the manner in which consumer studies should
15 be conducted; that is, I examined whether the Boedeker “economic model” and conjoint study
16 were reliable and capable of informing us about the alleged damages.

17 15. As explained in this report, Mr. Boedeker’s “choice-based-conjoint” study suffered
18 from numerous systematic biases and is therefore incapable of providing any reliable estimate of
19 the alleged harm, if any, to Seagate HD purchasers. Furthermore, the “economic model” is a
20 removed- from-reality theoretical “equilibrium” that is based on an irrelevant theory that has no
21 bearing or relevance to actual consumer decisions and feature valuations in reality.

22 16. Participants in Mr. Boedeker’s “choice-based-conjoint” study were asked to make a
23 series of choices among partially-described, hypothetical HDs. The attributes/features on which
24 the presented options differed were limited to warranty, connectivity/portability, and AFR (price
25 was included presumably in order to allow Mr. Boedeker to assign dollar values to specific AFR
26 differences). All other attributes, including key attributes such as capacity, software, ease of use,
27 and brand name, were ignored or “held constant.” Furthermore, AFR was the one dimension on
28

1 which the presented options displayed by far the greatest variability - between “less than 1%” and
2 “50%.”

3 17. This study design largely predetermined that AFR would be found to be extremely
4 valuable, and it thus represents a fatal flaw of the Boedeker Survey that by itself made it
5 unreliable. That is, by leading respondents to make choices based primarily on AFR and a couple
6 of other features while ignoring the many other attributes of HDs, the reported “harm” due to
7 differences on the AFR dimension offers no relevant information regarding any alleged harm in
8 reality. Choice-based-conjoint studies, particularly studies like Boedeker’s that unrealistically
9 limit the number of attributes respondents are able to consider, have been excluded or given little
10 weight by courts for precisely that reason; those decisions recognized that such a removed-from-
11 reality study can at best provide information about the value of the selected attributes *relative to*
12 *each other*, but cannot inform us about the *absolute dollar value* of any feature.⁷

13 18. Inexplicably, Mr. Boedeker attempted to defend his study design (during his
14 deposition) by suggesting that it made no difference whether purchasers of the HDs at issue were
15 ever exposed to or considered the AFR that appeared in any data sheet. In other words, according
16 to his view, no matter what AFR information was presented to consumers and whether they chose
17 to disregard the AFR and base their decisions on other attributes such as capacity, ease of use, and
18 brand, it is Mr. Boedeker’s view that they must have suffered harm because the market price
19 somehow reflects the value of the AFR representation regardless of whether any consumers saw or
20 relied on it (Boedeker deposition transcript, at 128:5-142:1). This makes no sense.

21 19. The Boedeker study suffered from other major flaws, including:

22 a. The study further inflated the produced AFR value by artificially extending
23 the range of AFR values from 1% to 50%; he “supported” the 50% extreme value based on a
24 report of a cloud-storage company (i.e., not the type of consumer at issue in this case), which had
25 misused the (consumer-oriented) HD.

27 ⁷ See, e.g., *Visteon Glob. Techs., Inc. v. Garmin Int’l, Inc.*, 10-CV-10578, 2016 WL 5956325, at *6 (E.D. Mich. Oct.
28 14, 2016); *Apple, Inc. v. Samsung Electronics Co., Ltd.*, 2014 WL 976898 at *11-16 (N.D. Cal. 2014); *Oracle*
America Inc. v. Google Inc., 2012 WL 850705, at *9-12 (N.D. Cal. Mar. 13, 2012), all discussed *infra* at ¶¶ 53-55.

1 b. Mr. Boedeker's claim that his study produced estimates representing
2 consumers' values and willingness-to-pay (WTP) for certain AFR differences is contradicted by
3 what is known about consumer values and preferences; more generally, there is no support or
4 evidence that any consumer has ever actually paid for an attribute/feature the WTP produced by a
5 study like the one relied upon by Mr. Boedeker.

6 c. Contrary to his pilot study (which had its own flaws and relied on an
7 arbitrary selection of attributes),⁸ the conjoint study on which Mr. Boedeker relied effectively
8 excluded (i.e., held constant) the attribute (capacity) found to be the most important and
9 inexplicably replaced "reliability" with AFR (ignoring the fact that, according to the actual
10 product's data sheet, AFR was one of seven attributes listed under "Reliability/Data integrity").

11 d. The study suffered from severe "demand effects" (as explained below),
12 whereby respondents were expected to make their choices based largely on the highlighted
13 features (i.e., those few that differentiated the presented options), especially the wide-ranging AFR
14 values.

15 e. As indicated, the conjoint design omitted key attributes, such as capacity,
16 ease of use, software, and brand name.

17 f. Contrary to basic principles of any experiment, the Boedeker study failed to
18 include any control.

19 g. Mr. Boedeker failed to report or explain the frequency of illogical choices
20 whereby inattentive respondents chose an option that was clearly inferior relative to other options.

21 h. The Boedeker Survey's results were not validated.

22 20. In conclusion, (a) Mr. Boedeker's "theoretical economic model" on which his
23 analysis is based is inconsistent with what the research shows about consumer preferences and
24 decision-making, and (b) Mr. Boedeker's conjoint exercise was fatally flawed, with its design
25 largely predetermining its reported findings.

26 _____
27 ⁸ Mr. Boedeker ran what he called a "pre-test" before the conjoint study, in which the term "reliability" was used
28 instead of "AFR," and other attributes in some cases differed from those included in the conjoint. Mr. Boedeker
testified that he "did not know the exact genesis or evolution" of the attributes selected by his staff for the pre-test.
(Boedeker Depo. at 267-68).

SURVEY OVERVIEW

21. The survey that I prepared, supervised, and analyzed was designed in a way that allowed respondents to evaluate the complete information available to buyers of the HDs at issue, who were exposed to the product's data sheet if they sought it out on Seagate's or a third-party seller's website. Consumers who bought these HDs without considering the data sheet were highly unlikely to see and be influenced by the AFR, which would include virtually all shoppers in brick-and-mortar stores.

22. By presenting respondents the data sheet, the survey allowed respondents to review the entire data sheet as it might be seen in reality and decide for themselves about their purchase criteria and preferences. As explained below, although the main part of my survey corrected the biases and basic flaws of Mr. Boedeker's methodology (discussed subsequently), I kept for the most part his definition of the respondent universe and the survey screening criteria.

23. A primary objective of the survey I designed was to determine whether and to what extent prospective purchasers of the hard drive at issue consider and are influenced by the presented AFR figure (within a conceivable range). Thus, although most real shoppers were unlikely to be exposed to the AFR and only those who visited the Seagate's or a third-party seller's website and looked for the data sheet might have seen the AFR, all survey respondents were shown the data sheet with the AFR (which was one of the seven features listed under "Reliability/Data integrity," as in the real Seagate data sheet).

24. Consistent with standard experimental design, the respondents were randomly assigned to a Test group or a Control group, which only differed with respect to the presented AFR rate: "< 1%" versus "< 8%". The survey was also designed to assess the dis/similarity among purchasers of Seagate HDs with respect to their HD uses and purchase criteria.

25. A standard methodology for predicting and explaining consumers' purchase decisions involves measuring their intentions to perform a behavior such as buying a service or product, followed by an explanation.⁹ That is, stated intentions to buy a new product or service

⁹ See, e.g., Linda Jamieson & Frank Bass, *Adjusting Stated Intentions Behavior to Predict Trial Purchase of New Products: A Comparison of Models and Methods*, Journal of Marketing Research, Vol. XXVI at 336-45 (1989).

are often the best available predictors of behavior. This approach has been used by businesses and consumer researchers numerous times. The managerial practice of relying on the measurement of stated intentions in order to predict consumer behavior were originally derived from the “Theory of Planned Behavior,” which accounts for the relation between intentions and behavior.¹⁰ The most commonly used intention measure is a 5-point scale, including: “Definitely will buy,” “Probably will buy,” “May or may not buy,” “Probably will not buy,” and “Definitely will not buy.”¹¹ As indicated, my survey employed this standard approach for estimating the impact on HD purchase intentions of replacing the “Less than 1%” AFR with “Less than 8%.”

26. The survey followed the standards with respect to such issues as asking nonleading questions, preventing response order effects, and survey validation. The survey also followed the “double-blind” standard – neither the respondents nor the online panel to which they belong knew the purpose of the study or the identity of its sponsor. Similarly, those who coded the open-ended responses did not know the purpose of the study or the identity of its sponsor.

27. Exhibit D presents the entire questionnaire, before it was programmed. Exhibits E1 and E2 present the screenshots of the entire study as seen by respondents. Exhibits G1 and G2 present the data sheets shown to respondents (the first page was identical in both versions).

SURVEY METHODOLOGY

The Survey Universe and Screening Criteria

28. As indicated, I decided to maintain the main screening criteria used by Mr. Boedeker, so any differences in estimates of the impact of AFR are not due to the different survey universe. Specifically, the screening questions (and related information provided in the screening phase) included the following:

a. The same explanation as in the Boedeker Survey of external and internal hard drive:

¹⁰ For a review, see, e.g., Icek Ajzen, *The Theory of Planned Behavior, Organizational Behavior and Human Decision Processes*, 50, 179-211 (1991).

¹¹ This measurement scale has been discussed in various marketing research textbooks and journal articles; see, e.g., William Zikmund, *Exploring Marketing Research*, 368-369 (3d ed. 1989).

1 “External Hard-drive:

2 An external hard-drive is a portable storage device that can be attached to a
3 computer through a USB or other cable connection, or wirelessly. External hard drives typically
4 have high storage capacities and are often used to back up computers or serve as a network drive.

5 Internal Hard-drive:

6 An internal hard-drive is a storage device located inside a computer system.
7 Although the computer you purchase has one or more hard-drives initially, it is possible to
8 purchase one or more additional hard-drives later and have them installed inside the computer or
9 the NAS (Network Attached Storage) after your initial purchase.

10 b. Have you purchased an external or internal hard-drive in the past six years?

11 Please count hard drives that were part of a Network Attached Storage (NAS) device but do not
12 count hard drives that were pre-installed or part of a computer package that you bought. [YES,
13 NO, Don’t Know/Not Sure]

14 c. Considering any hard-drive(s) that you purchased during the past six years,
15 please indicate the following: (Select one response) [I Made the decision; I was involved but not
16 the primary decision maker; I was not involved; Don’t know/Not sure]

17 d. Please select the one statement that best applies for any hard-drive(s) that
18 you purchased in the past six years.

19 I purchased an external or internal hard-drive ...(Select one response)

20 1: For business use only [Not Allowed to Continue]

21 2: For personal, non-business use only

22 3: For personal and business use

23 4: Don’t know/ Not sure [Not Allowed to Continue]

24 e. Which of the following hard-drive brand(s) have you purchased in the past
25 six years? (Select all that apply)

26 1: Seagate [CONTINUE]

27 2: Western Digital (WD) [CONTINUE]

1 3: HGST, or its predecessors Hitachi Global Storage Technologies or
2 Hitachi

3 4: Toshiba [CONTINUE]

4 5: Other (please specify): _____

5 6: Don't know/ Not sure [SINGLE RESPONSE]

6 f. What capacity external or internal hard-drive(s) did you purchase in the past
7 six years? (Select all that apply)

8 1: 1 TB

9 2: 2 TB

10 3: 3 TB

11 4: 4 TB

12 5: 5 TB

13 6: Other

14 7: Don't know / Not sure [SINGLE RESPONSE]

15 g. What year was your most recent purchase of an external or internal hard
16 drive which was 1 to 5 TB capacity? (Select one response)

17 1: 2017

18 2: 2016

19 3: 2015

20 4: 2014

21 5: 2013

22 6: 2012

23 7: 2011

24 8: Don't remember exact year but was within past 6 years

25 9: Other

26 29. To allow for validation of interviews, respondents were asked to provide
27 information (including telephone number) needed for subsequent validation, consistent with the
28 highest survey implementation standards. Those (relatively few) who refused to provide their

contact information were allowed to participate, assuming they were qualified participants. As explained below, an independent research firm later conducted a validation survey in which those who provided their contact information were asked questions designed to validate their survey participation.

MAIN QUESTIONNAIRE

30. Respondents were randomly assigned to the Test group (AFR = <1%) or the Control group (AFR = <8%). They were given the following instructions:

- First, for each question, if you don't know or don't have an answer, please don't guess, just indicate that you "don't know" or "don't have an answer" by typing in the words "don't know" and it will go on to the next question. Also, you should complete this survey without stopping in the middle, and please make sure not to consult anyone and not open another browser while working on this survey.
- Please review the following product data sheets as you would if you were actually considering buying a hard-drive. Make sure to review all the product information, specs, and any other information. First, please review the information on this first product data sheet. You may need to scroll down to see the entire page. When you are done, click on the >> at the bottom of the page to continue.
- Now, please review the information on this second product data sheet. You may need to scroll down to see the entire page. When you are done, click on the >> at the bottom of the page to continue.
- You can go back and review again the product data sheets you saw by clicking on the appropriate link at the bottom of each screen.

31. Next, respondents were asked about the likelihood of buying the hard drive (with the order of response options counterbalanced across respondents to prevent any order effects):

(QUESTION 250A)

Assuming you were considering buying this type of hard-drive and the product costs approximately \$79.00, how likely or unlikely would you be to buy the hard-drive shown on the product data sheets you just saw? – Would you say that you would Definitely buy it, you would Probably buy it, you May or May Not buy it, you would Probably Not buy it, or you would Definitely Not buy it? (Select one response)

"If you would like to view the FIRST product data sheet" again, please click here"

"If you would like to view the SECOND product data sheet" again, please click here"

- 1: Definitely buy it
- 2: Probably buy it
- 3: May or may not buy it

4: Probably not buy it
 5: Definitely not buy it

(QUESTION 250B)

Assuming you were considering buying this type of hard-drive and the product costs approximately \$79.00, how likely or unlikely would you be to buy the hard-drive shown on the product data sheets you just saw? – Would you say that you would Definitely not buy it, you would Probably not buy it, you May or May Not buy it, you would Probably buy it, or you would Definitely buy it? (Select one response)

“If you would like to view the FIRST product data sheet” again, please click here”

“If you would like to view the SECOND product data sheet” again, please click here”

5: Definitely not buy it
 4: Probably not buy it
 3: May or may not buy it
 2: Probably buy it
 1: Definitely buy it

Followed by:

What makes you say that you would (INSERT ANSWER FROM Q250a/Q250b)? Please type your answer below. Please be specific and include details.

Any other reason that you would (INSERT ANSWER FROM Q250a/Q250b)? Please type your answer below. Please be specific and include details.

32. Next, respondents were asked about their HD uses and general purchase criteria:

In general, what have been the main uses of the hard-drive(s) you bought in the past six years? Please type your answer below. Please be specific and include details.

Any other hard-drive uses? Please type your answer below. Please be specific and include details.

In general, what features or characteristics of hard-drives do you consider most important when deciding which hard-drive to buy? Please type your answer below. Please be specific and include details.

Any other hard-drive features or characteristics that you consider important when deciding which hard-drive to buy? Please type your answer below. Please be specific and include details.

Analysis and Validation

33. A total of 438 respondents completed the survey, between December 12th and December 17th 2017. The study’s implementation was managed and supervised by Target Research Group, a highly experienced survey research firm. Consistent with common practice, a total of seven respondents who completed the survey quickly (in less than three minutes) or took

too long (over an hour) were removed from the sample (their data are available). As indicated, respondents were not required to provide their telephone numbers but had the option to do it for the purpose of validation. In fact, 384 of the 438 respondents who completed the interview did provide their telephone numbers. Accordingly, a validation telephone survey was conducted by an independent research firm, Field Solutions (located in Florida). The research firm was able to reach 346 of the 384 who provided their telephone numbers (90%), a validation rate that exceeds industry and litigation survey standards. One discrepancy was discovered. The final, tabulated sample includes 430 respondents.

SUMMARY OF KEY FINDINGS

34. The complete study results, including the coded open-ended responses, are summarized in Exhibit F. Exhibit H includes an Excel file that presents the coded answers of all respondents. The codebook, which can be used to identify the meaning of each code (in Exhibit H), is included in Exhibit I. Exhibit J presents the open-ended (verbatim) and closed-ended responses. In this section I will review key findings and discuss their implications (additional findings are included in Exhibits F, G, and I).

35. The Tables in Exhibit F include a summary of the results for both the closed-ended questions and the open-ended verbal explanations (such as tables summarizing answers to the question: "Why do you say that?"). In most cases, the listed coded (verbal) answers add up to more than 100% because individual respondents often mention multiple reasons that are assigned different codes.

36. The Impact of AFR on Purchase Intentions. Table 9 in Exhibit F presents the results pertaining to the impact of the AFR value on purchase likelihood. These results are reproduced below. Differences between the two groups of at least 10% are statistically significant.

<u>Likelihood of Buying</u>	<u>AFR <1%</u>	<u>AFR < 8%</u>
Definitely buy	22.9%	24.1%
Probably buy	46.3	39.2
May or may not buy	22.9	28.8%

<u>Likelihood of Buying</u>	<u>AFR <1%</u>	<u>AFR < 8%</u>
Probably not buy	5.5%	3.8%
Definitely not buy	2.3%	4.2%
Total Respondents	n = 218	n = 212

37. As these results show, there were no significant differences in purchase intentions between the two groups.¹² That is, those shown the data sheet with AFR < 8% were as likely to buy the HD as those shown the product with AFR < 1%. Evidently, despite presenting all respondents with the AFR, consumers focused on other product attributes such as capacity and brand, and the AFR was not a significant driver of HD purchase decisions.

38. Tables 10 and 11 in Exhibit F present the respondents' reasons for their indicated purchase intention. Important response categories included, for example, capacity, cost, brand, and usefulness. Virtually no one (less than 1%), even among those less inclined to buy the product, mentioned the AFR in general or the AFR of < 8% in particular.

Uses and Purchase Criteria

39. Table 12 in Exhibit F presents the answers pertaining to the uses of the HD. Respondents mentioned a wide range of uses, such as video files, storing old files, and music files.

40. Table 13 in Exhibit F presents the answers pertaining to the general purchase criteria when buying HDs. Respondents mentioned a wide range of criteria, such as capacity (by far the most commonly mentioned decision factor), speed, convenience/ease of use, brand, and physical dimensions. Only 2.5% mentioned failure rate.

Conclusion

41. In conclusion, the survey results showed that those who considered the higher AFR of <8% were not less (or more) likely to buy the product. As their explanations further showed,

¹² By chance alone, one would expect some minor differences between any two groups. However, if the differences do not reach statistical significance (and on rare occasions, even if they do), one can conclude that the two groups are indistinguishable. The former is the case here.

1 their main focus was on other attributes such as capacity, ease of use, size, and brand. The survey
 2 results also showed a great diversity of HD uses and purchase criteria.

3 **AN EVALUATION OF THE BOEDEKER REPORT**

4 **Introduction**

5 42. Mr. Boedeker described his assignment as follows (Boedeker Report, p. 5):

6 “15. I have been retained by counsel for Plaintiffs to develop an economic loss
 7 model to quantify the damages, if any, suffered by the proposed class that are
 8 attributable to the purchase of a product that was not as presented and advertised to
 9 the consumers. Specifically, I have been retained to develop and perform an
 empirical study to assess the value that customers, who purchase Seagate Drives,
 place on the specific statements outlined in Paragraph 12.

10 16. I have further been asked to use the results of the empirical study and other
 data to develop an econometric/statistical model to quantify and estimate class-
 wide damages to purchasers of Seagate products with the alleged misstatements
 due to not receiving benefits and features that they paid for and that they were led
 to believe the Seagate Drives possessed.”

12 43. Accordingly, one way to evaluate the Boedeker study and model is based on
 13 whether they met the stated objectives and produced reliable estimates of the alleged damages to
 14 purchasers of Seagate HDs at issue. In particular, I will examine whether the Boedeker Survey
 15 followed basic survey standards and whether the “model” approximates reality and reflects
 16 current research regarding the manner in which consumers form preferences and make decisions.
 17 To the extent that the Boedeker Survey suffered from specific biases and the model misrepresents
 18 reality, I will consider whether these biases and misrepresentations were likely to produce
 19 unreliable, systematically skewed conclusions.

20 44. As described in detail below, Mr. Boedeker’s choice-based-conjoint suffered from
 21 many systematic biases and is therefore incapable of providing any reliable estimate of the alleged
 22 harm, if any, to Seagate HD purchasers. Before examining the survey’s many flaws and their
 23 implications, I begin with a brief overview of this conjoint survey and basic principles of
 24 consumer decision-making and survey research.

25 45. Participants in Mr. Boedeker’s “choice-based-conjoint” study were asked to make a
 26 series of choices among partially described, hypothetical HDs. The attributes/features on which
 27
 28

1 the presented options differed were limited to warranty, connectivity/portability, and AFR. All
 2 other attributes were ignored or held constant.

3 46. The key attribute based on which respondents were asked to determine their
 4 choices was the AFR, which varied between “less than 1%” and “50%.” Using the results of his
 5 study, Mr. Boedeker suggests that he could determine the absolute dollar value of any AFR
 6 difference within the 1%-50% range.

7 47. Before examining Mr. Boedeker’s survey methodology and model in more detail, I
 8 briefly review some key principles of surveys and influences on consumer decision-making and
 9 their implications for the manner in which consumer values and preferences can/not be estimated.
 10 Understanding these principles is important, because they should guide the design of a consumer
 11 survey so as to enable it to be informative and not misleading regarding the behavior and decisions
 12 of consumers in reality.

13 **Basic Principles of Surveys and Consumer Decision-Making and Research**

14 48. As I have taught my students in MBA and doctoral courses, consumer preferences
 15 are often greatly influenced by the manner in which options and attributes are described, the
 16 choice context (i.e., the set of options being considered), and the manner in which preferences are
 17 elicited. The reason for these influences is that preferences and valuations tend to be ill-defined,
 18 malleable, and thus susceptible to seemingly irrational influences¹³. I have authored and published
 19 many articles demonstrating the sensitivity of measured values and preferences to the context of
 20 choice (i.e., the set of options presented to respondents/consumers), the description of available
 21 options and features, and the manner in which preferences are measured (or elicited). I currently
 22 teach at the Stanford Graduate School of Business an MBA course on the subject, titled “Applied
 23 Behavioral Economics” as well as a doctoral course titled “Behavioral Decision Making.” The
 24 conclusions from my research and the research of other scholars in the decision-making field¹⁴

25
 26 ¹³ See, e.g., D. Kahneman & A. Tversky, *Choices, Values, and Frames* (2000); see also Itamar Simonson & Emanuel
 Rosen, *Absolute Value: What Really Influences Customers in the Age of (Nearly) Perfect Information* (2014).

27 ¹⁴ For reviews, see, for example, Itamar Simonson, *Get Closer to Your Customers by Understanding How They Make*
 28 *Choices*, 35 Cal. Mgmt. Rev. 68-84 (1993); Itamar Simonson, *Shoppers’ Easily Influenced Choices*, N.Y. Times, at
 F11 (Nov. 6, 1994); James R. Bettman et al., *Constructive Consumer Choice Processes*, 25 J. Consumer Res. 187

1 have identified various influences on measured preferences. I next elaborate on some of the
 2 findings about consumer decision-making and survey principles that are specifically relevant to
 3 my evaluation below of the Boedeker study.

4 **Focalism Bias and the Importance of Realistic Choices**

5 49. It is well-established that a researcher can manipulate the measured importance of
 6 attributes by focusing respondents' attention on a subset of attributes while ignoring other
 7 attributes/features that consumers would normally consider in reality. Survey respondents tend to
 8 focus on whatever information is made salient in the context of the study and is thus the most
 9 prominent and appears most relevant (referred to as the "local context"¹⁵), while often paying little
 10 or no attention to other options and attributes that are not prominent in the study (or are "held
 11 constant" across all options).¹⁶ For example, one of the important features to car buyers is likely
 12 to be how the car drives and its horsepower; if a survey ignores these (and other) important
 13 attributes while asking respondents about the importance of windshield wipers and heated seats,
 14 the survey results are likely to greatly inflate the actual impact and importance of the wipers and
 15 heated seats while implying that other (much more important) attributes can be disregarded.

16 50. The idea that a researcher can manipulate the measured importance of attributes by
 17 focusing respondents' attention on a subset of attributes while ignoring other attributes/features
 18 that consumers would normally consider is a well-known survey bias known as the "focalism
 19
 20

21 (1998); Ravi Dhar & Itamar Simonson, *The Effect of Forced Choice on Choice*, 40 J. of Marketing Res., 146-60
 22 (2003); Ran Kivetz & Itamar Simonson, *The Effect of Incomplete Information on Consumer Choice*, 37 J. of
 23 Marketing Res., 427-48 (2000); Stephen Nowlis & Itamar Simonson, *The Effect of New Product Features on Brand*
 24 *Choice*, 33 J. of Marketing Res. 36-46 (1996); Ziv Carmon & Itamar Simonson, *New Insights into the Prominence*
 25 *Effect*, 7 J. of Consumer Psychol. 323-343 (1998); Stephen Nowlis & Itamar Simonson, *Attribute-Task Compatibility*
 26 *as a Determinant of Consumer Preference Reversals*, 34 J. of Marketing Res. 205-218 (1997); Itamar Simonson &
 27 Amos Tversky, *Choice in Context: Tradeoff Contrast and Extremeness Aversion*, 29 J. of Marketing Res., 281-295
 28 (1992); Eldar Shafir, Itamar Simonson, & Amos Tversky, *Reason-Based Choice*, 49 Cognition 11-36 (1993); Amos
 Tversky & Itamar Simonson, *Context-Dependent Preferences*, 39 Mgmt. Science 1179-1189 (1993); Max Bazerman
 & Don Moore, *Judgment in Managerial Decision Making* (8th ed. 2013).

¹⁵ See Itamar Simonson & Amos Tversky, *Choice in Context: Tradeoff Contrast and Extremeness Aversion*, 29 J. of
 Marketing Res., 281-295 (1992).

¹⁶ See, for example, Ravi Dhar & Steven J. Sherman, *The Effect of Common and Unique Features in Consumer*
Choice, 23 J. of Consumer Res. 193-203 (1996); Itamar Simonson & Amos Tversky, *Choice in Context: Tradeoff*
Contrast and Extremeness Aversion, 29 J. of Marketing Res. 281-295 (1992).

1 bias.” By itself, focalism bias can produce highly unreliable and skewed estimates, which tend to
 2 greatly overestimate the impact of the singled-out (i.e., focal) aspects.

3 51. To understand this bias, we should take into consideration that in reality
 4 consumers’ decisions regarding complex, multi-attribute products such as hard drives and
 5 smartphones are based on a combination of many features, some of which are more important than
 6 others. Trying to assess the importance of individual features in isolation, while ignoring many
 7 other features, tends to lead to biased results due to the “focalism bias.” Specifically, singling-out
 8 one or a few features without simultaneously considering the other important features tends to
 9 greatly overstate the importance of the focal feature as compared to its impact (if any) on actual
 10 purchase decisions made in a real-life context. Focalism bias is general and applies to the
 11 measurement of the importance of any singled-out feature, not just product features. For example,
 12 Daniel Kahneman (a Nobel Prize winner) and his co-author showed that, due to focalism, people
 13 overestimate the impact of weather on happiness when they compare the happiness of people
 14 living in California and Ohio.¹⁷ Similarly, in the context of a removed-from-reality conjoint study,
 15 even a small and insignificant difference on a particular feature may loom large if consumers are
 16 asked about it and a few other features while ignoring most other attributes.

17 52. In general, participants in choice-based-conjoint studies make choices among
 18 different product configurations (or “profiles”) that are supposed to mimic hypothetical choices
 19 that consumers might actually make. Although it is usually not practical to include all product
 20 attributes in these hypothetical configurations, the most important attributes should be explicitly
 21 included (i.e., varied across the considered options) in the presented configurations for findings
 22 that could potentially inform us about real consumer choices.

23 53. Recognizing the implications of focusing on a few features while ignoring other
 24 valued product attributes, courts have harshly criticized conjoint studies that focused on a few
 25 features while excluding from the study many of the most important drivers of real world
 26 decisions. For example, in *Visteon Glob. Techs., Inc. v. Garmin Int’l, Inc.*, the court excluded a

27
 28 ¹⁷ See David A. Schkade & Daniel Kahneman, *Does Living in California Make People Happy? A Focusing Illusion in Judgments of Life Satisfaction*, 9 Psychol. Science, 340-346 (1998).

1 survey designed to test the values of allegedly infringing product features because it failed to
 2 include key product features; as the court pointed out, the failure to include key attributes meant
 3 that the only information the survey could potentially provide was the values of the tested features
 4 *relative to each other*, rather than their absolute (dollar) value.¹⁸ That is, if clearly important
 5 features (for example, the camera of a mobile phone) are ignored or “held constant,” then the true,
 6 relevant absolute value of the features that happen to be included in the survey cannot be assessed
 7 (e.g., in terms of real dollars), making the survey unreliable and largely irrelevant.

8 54. In another case (*Oracle, Inc. v. Google Inc.*¹⁹), the court excluded a conjoint study
 9 (pertaining to smartphones) due to its focalism on less important features while failing to include
 10 more important attributes; the court also highlighted the inability of participants in the conjoint
 11 survey at issued to “hold all other factors constant,” which is not surprising and certainly not
 12 unique to the conjoint study used in the Oracle-Google case (as discussed further below). The
 13 court’s order points out the following:

14 “Dr. Shugan’s own focus-group research discovered 39 features that real-world
 15 consumers said they would have considered when purchasing a smartphone,
 16 including battery life and cellular network (Shugan Rpt Exh. 1). But instead of
 17 testing 39 features in his conjoint analysis, Dr. Shugan selected seven features to be
 studied, three of which were covered by the patented functionality. It is highly
 likely that study participants would have placed greater importance on a feature like
 startup time if it were shown with six other features as opposed to 38 other features.

18 In the first scenario, participants in the study were artificially forced to focus on
 19 startup time even if in the real world, startup time was unimportant to them. If Dr.
 20 Shugan had instead showed 39 different features to a study participant, then startup
 21 time (*i.e.*, the patented functionality) may have been drowned out by the multitude
 22 of other features that are considered by real-world consumers. In the real world, a
 23 consumer is faced with many features when making a decision to purchase, not
 24 artificially focused on a particular feature. This problem is exacerbated by the fact
 25 that important product features, such as battery life, WiFi, weight, and cellular
 network, all of which were not covered by the patented functionalities, were
 purposely left out and replaced with an arguably unimportant feature, voice dialing.
 Dr. Shugan had no reasonable criteria for choosing the four non-patented features
 to test; instead, he picked a low number to force participants to focus on the

26 ¹⁸ *Visteon Glob. Techs., Inc. v. Garmin Int’l, Inc.*, 10-CV-10578, 2016 WL 5956325, at *6 (E.D. Mich. Oct. 14, 2016)
 27 (“[T]he only ‘value’ expressed . . . is the relative value of the four asserted patented features to one another. [Such]
 conjoint results express nothing about the value of the four patented features relative to other important features of the
 accused devices.”).

28 ¹⁹ *Oracle America Inc. v. Google Inc.*, No. C10-03561 WHA, 2012 WL 850705, at *9-12 (N.D. Cal. Mar. 13, 2012).

1 patented functionalities, warping what would have been their real-world
2 considerations.” 2012 WL 850705, at *10.

3 55. Similarly, the Court in the *Apple v. Samsung* case (Motion denying Apple’s
4 renewed motion for permanent injunction; March 6, 2014)²⁰ was critical of a choice-based-
5 conjoint study conducted by Dr. Hauser, in which options varied on six features; while six
6 attributes is more than the three highlighted features in the Boedeker study, that was still deemed
7 unreliable and uninformative regarding the real value of the singled-out features. The Court
8 explained at great length why the exclusion of many of the most important product features made
9 the study unreliable. Furthermore, the Court found that “evidence of the “price premium” over the
10 base price Samsung consumers are willing to pay for the patented features is not the same as
11 evidence that consumers will buy a Samsung phone instead of an Apple phone because it contains
12 that feature.” *Apple III*, 909 F. Supp. 2d at 1156 (citation omitted). Because the Court concluded
13 that the survey did “not address the relationship between demand for a feature and demand for a
14 complex product incorporating that feature and many other features.”

15 56. The problem of focalism (or “impact bias”) is especially pronounced when it
16 pertains to singled-out features that consumers would not normally see or consider before making
17 a purchase; such a bias further magnifies the difference between what respondents must focus on
18 in the context of an artificial survey versus what consumers actually consider in reality. Of course,
19 the purpose of a survey is to inform us about real-world consumer decisions and valuations rather
20 than made-up choices and results that merely reflect the flaws of an artificial survey. Thus, when
21 a researcher uses a conjoint study that is designed to predict actual marketplace choices, it is
22 essential that all important attributes are included in the descriptions of considered options. This
23 rule is also consistent with the well-known statistical modeling error, referred to as the “omitted
24 variable bias,” which occurs when important variables are omitted from a model designed to
25 estimate the effects of other variables.²¹

26
27 ²⁰ *Apple, Inc. v. Samsung Elecs. Co., Ltd.*, No. 11-CV-01846-LHK, 2014 WL 976898 at *11-16 (N.D. Cal. Mar. 6,
28 2014).

²¹ For a simple overview to this bias, see, for example, https://en.wikipedia.org/wiki/Omitted-variable_bias.

57. Thus, a choice-based-conjoint exercise in which only a few attributes differentiate the presented options while leaving out (or holding “constant”) most product attributes is bound to be biased and greatly inflate those few attributes on which the presented options differ. Instructing survey respondents to assume that attributes of the presented options other than those specifically identified in the survey are identical, is ineffective.²² In particular, respondents tend to focus on the attributes that differentiate the options presented to them, and pay no attention to other nonpresented attributes. Respondents can also assume that they are expected to focus on the attributes that differentiate the options, rather than other attributes. Features that are common (or “held constant”) across all options are therefore simply canceled out and disregarded by consumers/ respondents.

The Unreliability of Willingness-to-Pay Measures and Estimates

58. Consistent with what is known about consumer preferences, estimates of the absolute dollar values of specific features as well as estimates of willingness-to-pay (WTP) for a product tend to be unreliable and are often influenced by irrelevant factors. To illustrate the degree to which consumers’ WTP estimates are susceptible to irrelevant influences, consider the following published study.²³ Participants in the study were shown different products and asked to indicate their WTP for each. First, however, they were asked to enter the last two digits of their social security number (SSN) and, assuming the last two digits were a price in dollars, whether they would be willing to pay that price for the product. For example, respondents were shown a toaster (including a picture of the toaster and a list of features). They were first asked if they would be willing to buy the toaster assuming its price in dollars was equal to the last two digits of their SSN. They next indicated the highest price they would be willing to pay for the toaster. The results showed that respondents whose last two SSN digits were between 00 and 49 were willing to pay significantly less for the toaster than those whose last two digits were between 50 and 99.

²² See, for example, Ravi Dhar & Steven J. Sherman, *The Effect of Common and Unique Features in Consumer Choice*, 23 J. of Consumer Res. 193-203 (1996).

²³ Itamar Simonson & Aimee Drolet, *Anchoring Effects on Consumers’ Willingness-to-Pay and Willingness-to-Accept*, 31 J. of Consumer Res. 681-90 (2004).

1 Merely considering random two digits affected the measured WTP for the products. Such findings
 2 demonstrate that WTP estimates tend to be highly sensitive to the questions asked and the
 3 considered reference points. There have been many other demonstrations of the unreliability of
 4 willingness-to-pay measures, such as in valuations of public goods.²⁴ It is particularly important to
 5 point out that, as far as I am aware, there has never been any study that confirmed that customers
 6 were *in reality* willing to pay the price for a given feature value that was derived from a choice-
 7 based-conjoint study (or any other type of conjoint study). Mr. Boedeker has not cited such
 8 evidence either. Thus, putting aside the obvious flaws and limitations of the methodology relied
 9 upon in the Boedeker Survey, to my knowledge, the claim that certain AFR differences are
 10 associated with a particular willingness-to-pay or monetary value has never been realistically
 11 validated and is contradicted by what research shows about consumer preferences.

12 **Multi-Attribute Diminishing Sensitivity and the Importance of Including Other**
 13 **Product Features and Brand Names in Choice Studies that Claim to Determine**
 14 **the Dollar Values of Features**

15 59. Another important finding regarding consumer decision-making is related to the
 16 concept of “multi-attribute diminishing sensitivity,”²⁵ which was first demonstrated by my
 17 previous student Stephen Nowlis and me in 1996 (the article received the O’Dell Award for the
 18 *Journal of Marketing Research* article that had the greatest impact on the marketing field between
 19 1996 and 2001). “Multi-attribute diminishing sensitivity” indicates that the impact of a product
 20 feature on consumers’ preferences for the product depends on preexisting characteristics of the
 21 product and the brand. In particular, compared to a relatively lower performance product, a
 22 product that is associated with perceived advantages gains much less in terms of valuation and
 23 choice share when yet another feature is added. Thus, for example, if Seagate (or Barracuda)
 24 drives already have attractive features, a change in attribute value (e.g., 1% versus 5% AFR) is

26 ²⁴ See, for example, Daniel Kahneman & Jack Knetsch, *Valuing Public Goods: The Purchase of Moral Satisfaction*,
 27 22 J. of Envtl. Econ. & Mgmt. 57-70 (1992).

28 ²⁵ Stephen Nowlis & Itamar Simonson, *The Effect of New Product Features on Brand Choice*, 33 J. of Marketing Res. 36-46 (1996).

likely to have a relatively minor, if any, effect on value or consumers' preferences for the product. The evidence that new features have lower impact on strong products and brands is widely accepted in the field, and has influenced and has been relied upon by marketing experts and managers.²⁶

60. Given that the value of a feature depends on the product's other features and the brand and considering that survey respondents focus on aspects that differentiate the options presented to them, any study that is intended to estimate *absolute dollar values* of features (even assuming that is possible) must include multiple brands in the choice set. That is, in any real competitive marketplace, willingness-to-pay for a product and the value of a given feature *is relative to the other choices with which consumers are presented*. Thus, without presenting multiple brands, it is impossible to determine if the addition of a feature to a given brand would actually increase the willingness-to-pay for that product in reality. Of course, if the feature at issue does not affect the WTP for the product and does not affect its choice likelihood, that feature has no real monetary value. As explained below, The Boedeker study failed to include the brand names and other key features, which further inflated the impact of the attribute that was emphasized – the AFR.

“Preference Construction”: The Impact of the Description of Options and Features, the Choice Context, and the Manner in which Preferences Are Elicited on Consumers’ (and Respondents’) Expressed Preferences

61. As indicated, a great deal of research regarding consumer decision-making and the “construction of preferences” has demonstrated the major impact of the manner in which options and features are described, the choice context (i.e., the specific set of options and attributes presented to respondents/consumers), and the preference elicitation method. For example, asking respondents to equate the values of two options generates preference estimates that are quite

²⁶ See, for example, Steve Hoeffler & Kevin Keller, The Marketing Advantages of Strong Brands, 10 Brand Mgmt. 421, 435 (2003).

different from those derived based on choices between options.²⁷ As an illustration of effect of attribute description, one study, for example, found that describing ground beef as being 80% lean generates more favorable evaluations of the beef than if the same beef is described as containing 20% fat.²⁸ Accordingly, a study such as Mr. Boedeker's conjoint study must (a) describe the options and features accurately and in the way that actual consumers perceive these products, (b) present the set of options and relevant features (including all features that impact actual consumer choices) accurately and realistically, and (c) measure respondents' preferences in the same way as consumers would likely do when making purchase decisions in reality. As explained below, Mr. Boedeker's study did not satisfy these requirements.

The Importance of Avoiding "Demand Effects"

62. As I teach my students in courses that deal with consumer research, when designing a survey, the researcher must avoid "demand effects." Demand effects²⁹ relate to the phenomenon whereby survey respondents use cues provided by the survey procedure and questions to figure out the purpose of the survey and what they imagine to be the "correct" answers to the questions they are asked. The respondents then tend to provide what they perceive as the "correct" answers as a way to ensure that the results "come out right." Demand and order effects can pollute the results of a survey dramatically, especially when they call attention to or make salient a particular consideration or option while neglecting other factors or options. For example, in one study,³⁰ college students were asked two questions: "How happy are you?" and "How many dates did you have last month?" The correlation between answers to these questions depended on the order in which they were asked – the correlation was 0.12 when the question about happiness was asked first, and it increased to 0.66 when the question about the number of

²⁷ See, for example, Ziv Carmon & Itamar Simonson, *Price-Quality Tradeoffs in Choice Versus Matching: New Insights into the Prominence Effect*, 7 J. of Consumer Psychol. 323-343 (1998).

²⁸ Irwin Levin & Gary Gaeth, *How Consumers Are Affected by the Framing of Attribute Information Before and After Consuming the Product*, 15 J. of Consumer Res. 374-378 (1988).

²⁹ See, for example, Martin Orne, *On the Social Psychology of the Psychological Experiment*, 17 Am. Psychol. 776-783 (1962). For a review of the impact of demand effects in likelihood of confusion surveys, see Itamar Simonson & Ran Kivetz, *Demand Effects in Likelihood of Confusion Surveys: The Importance of Marketplace Conditions, in Trademark and False Advertising Surveys* (Shari Diamond & Jerre Swann eds., 2012).

³⁰ Described in Norbert Schwarz, *Cognition and Communication: Judgmental Biases, Research Methods, and Logic of Conversation* (1996).

1 dates was asked first. Thus, judgments of happiness were strongly influenced by the number of
 2 dates only when the question about the number of dates appeared before the question about
 3 happiness. Similarly, just as judgments of happiness tend to be strongly influenced but whatever
 4 is made salient because it is explicitly mentioned, preferences are strongly influenced by the set of
 5 options and attributes presented to survey respondents. It is noteworthy that courts have also
 6 recognized the significance of demand effects, and such problems have contributed to the rejection
 7 of surveys.³¹ As explained further below, evidence that preferences are largely constructed based
 8 on the attributes and options shown to respondents/consumers highlights the biases produced by
 9 Mr. Boedeker's conjoint design.

10 **The Importance of a Proper "Control" in Any Test of a Cause and Effect Relation**

11 63. A survey designed to test a cause-and-effect relation, such as whether a particular
 12 feature enhances the perceived value of a product, must include a proper "control." A control is
 13 designed to estimate the degree of "noise" or "error" in the survey and to enable the researcher to
 14 isolate the effect at issue. Indeed, without a proper control, there is no benchmark for determining
 15 whether any estimate is significant or merely reflects guessing and the flaws of the survey
 16 methodology.

17 64. Mr. Boedeker states that he relied on the *Reference Guide on Survey Research*.³²
 18 As discussed in detail in pages 397-401 of that *Reference Guide*, any study designed to test for a
 19 cause-and-effect relation (such as the effect of a particular AFR difference on the value of a
 20 product) must include a proper control. As explained below, Mr. Boedeker failed to follow that
 21 guidance.

22 **The Importance of Approximating the Information Available to Consumers in Reality**

23 65. Any study of consumer decision-making and any attempt at determining the dollar
 24 value of product attributes (assuming that were possible) must approximate marketplace
 25 conditions as closely as possible. For example, one legal authority, Professor McCarthy, pointed
 26

27 ³¹ See, for example, *Simon Prop. Grp. L.P. v. MySimon, Inc.*, 104 F. Supp. 2d 1033 (S.D. Ind. 2000).

28 ³² Shari Seidman Diamond, *Reference Guide on Survey Research, Reference Manual on Scientific Evidence* 359-423 (3rd ed. 2011); it was cited as a reference and also cited in the Boedeker Report's footnotes.

1 out regarding trademark surveys, “the closer the survey methods mirror the situation in which the
 2 ordinary person would encounter the trademark, the greater the evidentiary weight of the survey
 3 results.”³³ Indeed, courts have given little or no weight to (or excluded) “likelihood of confusion”
 4 surveys that failed to capture essential characteristics of the marketplace, such as showing the
 5 marks at issue in a way that misrepresents reality. Similarly, market research firms have gone to
 6 great lengths to approximate reality in order to generate more accurate estimates of consumer
 7 behavior. Businesses that hire such firms thus understand the importance of realistic market
 8 research in making actual marketing decisions.

9 66. A great deal of research has shown that when making decisions and evaluating
 10 products, consumers rely on attributes and values that are both available and easy to process.³⁴
 11 Accordingly, **unless consumers observe and consider product attributes, they cannot be**
 12 **influenced by them.**

13 67. Contrary to Mr. Boedeker’s argument, there is no support in any consumer
 14 decision-making research for the notion that a product feature can influence the value of the
 15 product or the product market price if that feature is ignored or not known by consumers or is
 16 otherwise not among the purchase considerations. More generally, designing a study about
 17 consumer decision-making requires a good understanding of how consumers make decisions in
 18 real life. A person who lacks such understanding is unlikely to design a proper survey (unless
 19 guided by a consumer behavior expert), because such a study is likely to make the wrong
 20 assumptions or rely on improper measures.

21 **THE BOEDEKER “THEORETICAL FRAMEWORK” AND CONJOINT STUDY**

22 68. I next explain some of the key implications of the principles of survey design and
 23 consumer decision-making for the theoretical economic model and study relied upon by Mr.
 24 Boedeker. Mr. Boedeker suggests that his analysis allowed him to determine the harm in dollars
 25 to buyers of the accused HDs (Boedeker Report, p. 7). According to his “analysis,” the harm
 26

27 ³³ 4 J. Thomas McCarthy, *McCarthy on Trademarks and Unfair Competition* (September 2007) (McCarthy) at §
 32:163. See also *THOIP v. Walt Disney Co.*, 690 F. Supp. 2d 218 (S.D.N.Y. 2010).

28 ³⁴ See, for example, Bettman et al. (1991), “*Consumer Decision-making*,” *Handbook of Consumer Behavior*.

1 caused to buyers is either a very substantial portion of the product's price or even greater than the
 2 total product price. Consistent with the above review, Mr. Boedeker's conjoint survey violated the
 3 basic survey principles described above, and his "theoretical framework" has little to do with
 4 current research regarding consumers' preferences and valuations. Indeed, Mr. Boedeker's
 5 "theoretical framework" is completely removed from reality and offers no relevant information. It
 6 is based on assumptions from theoretical economics that have been refuted many years ago.

7 **Mr. Boedeker's "Theoretical Framework" and Consumers' Willingness-to-Pay**

8 69. I described above the manner in which consumer preferences are determined. By
 9 contrast, Mr. Boedeker, who apparently has little knowledge of actual consumer decision-making,
 10 relies on an outdated, irrelevant "theoretical framework." This "analysis" is based on assumptions
 11 derived from theoretical economic articles published in the 1960s (or earlier) that do not mesh
 12 with reality. No consumer researcher, manager, or market researcher that I am aware of relies on
 13 such theoretical frameworks today.

14 70. The presented framework led Mr. Boedeker to what appear to be nonsensical
 15 conclusions. For example, he suggested that the impact of the actual AFR value on consumers'
 16 preferences is not influenced by whether consumers even saw or considered the AFR. As he
 17 testified during his deposition:

18 DEPO P. 223:

19 14THE WITNESS:My model, my approach
 20 15applies regardless of an individual consumer's
 21 16recollection or actual viewing that information.
 22 17The relevant part from my model, my
 23 18analysis, is to see if there is a new equilibrium
 24 19price for a different product, like in this case
 25 20with a different AFR.

26 Q (By Ms. McLean) Whether the consumer
 27 saw the AFR in making their decision, whether they
 28 cared about the AFR, whether they knew what an AFR

1 was, none of that matters in your damages model?

2 MS. SCARLETT: Objection to form.

3 1THE WITNESS:That's correct.It's

4 2 not part of the -- the parameters in my study.

5 3Q(By Ms. McLean) Would it matter if AFR

6 4 data was not published for certain drives that are

7 5 part of the class drives?

8 6 MS. SCARLETT:Objection to form.

9 7 THE WITNESS:If there was no

10 8 information about AFR out there, that would be a

11 9slightly different study, but even if that wasn't

12 10published, a study like this could still measure

13 11the equilibrium price for different -- for

14 12 different outcomes of AFR, and then that would

15 13have to be -- it's a different study so I can't --

16 14I can't design it ad hocly, but I would say it

17 15could be captured with a similar study of this

18 16kind if not -- not having AFR information

19 17available or not.

20 18 So in a sense the study would not be

21 19 the same as here because here I have direct

22 20 discrete points of comparison, so I would say I

23 21 probably have to think about it, but I wouldn't

24 22rule out that a study like this could capture

25 23differences in prices.

26 24 Q(By Ms. McLean) The study that you have

27 25 conducted does not consider whether individual

28

1 1 products that contained the Seagate drive at issue
2 2 had AFR data published or not?It assumes that
3 3 data was available for all ST3000-DM001 products?
4 4 MS. SCARLETT:Objection, form.
5 5 THE WITNESS:What my study does is
6 6 comparing different AFR, one percent and all the
7 7 way to like 50 percent on the extreme end, and I
8 8 did not look at which individual models had AFR
9 9 information published with them. (Boedeker Depo at 223:10-225:9)

10 71. Thus, contrary to what contemporary research shows about the manner in which
11 consumers make decisions (as well as common sense), Mr. Boedeker suggests that consumers can
12 be strongly influenced by an attribute they never considered or were even exposed to. To the
13 contrary, if an attribute such as AFR is not published or considered, then consumers would have
14 made the same purchase decisions regardless of the specific AFR presented by Seagate, and the
15 AFR made no difference.

16 **The Boedeker Conjoint Study Was Designed in a Way that Predetermined**
17 **that AFR Differences Would be Very Influential and Highly Valued**

18 72. I described above court decisions that excluded or gave little weight to conjoint
19 studies, particularly when the descriptions of options were limited to relatively few attributes that
20 differentiated the options included in the choice sets. The current Boedeker conjoint survey was
21 worse than those disfavored studies because it forced respondents to make choices based on AFR
22 and a couple of other attributes (warranty + connectivity/Portability) while effectively ignoring
23 most of the important attributes. Indeed, an examination of the data sheet describing the HD's
24 attributes/features shows that over two dozen attributes differentiate HDs. It is my understanding
25 that this data sheet and other dense publications such as product manuals were the only
26 information sources any buyers might have relied on with respect to AFR.

27 73. Consumers are highly unlikely to purchase a HD based solely on the limited set of
28 attributes that differentiated options in the Boedeker study, and Mr. Boedeker's study does not

1 suggest otherwise. Moreover, as explained further below, by leading respondents to consider AFR
 2 values between 1% and 50%, the study virtually guaranteed that AFR would appear to be the most
 3 valuable attribute, presumably implying extremely high damages to consumers.

4 74. The decision to rely on a <1%-50% AFR range, regardless of the relevant range,
 5 violates one of the most basic principles of conjoint studies. By testing an exceptionally wide
 6 range for the AFR dimension – from <1% to 50% (while the two other differentiating attributes
 7 had a narrow range) – Boedeker’s design was further biased in favor of showing that AFR was
 8 the most valuable and impactful attribute (notwithstanding the fact that, in reality, very few buyers
 9 were likely to consider or be exposed to AFR).

10 75. Mr. Boedeker suggested that a 50% AFR was a plausible value for class members,
 11 who are the typical purchasers of the HD at issue. The only “support” for the 50% figure was an
 12 online report prepared by a company called Backblaze. However, as Mr. Boedeker should have
 13 known, that report (based on 24/7 commercial data center use of consumer grade hard drives) was
 14 irrelevant to his survey, which presumably focused on consumers. That is, putting aside the lack of
 15 reliable evidence that Blackblaze’s experience was as claimed, this company used the HDs 24/7 in
 16 a commercial environment, contrary to the product’s intended use. Clearly, Backblaze’s
 17 experience (if it was as stated) was irrelevant to the HDs used by the proposed class members, and
 18 therefore, Backblaze’s claimed failure rate should not have influenced the Boedeker Survey
 19 design.

20 76. According to Mr. Boedeker’s deposition testimony, even if 50% was an unrealistic
 21 number, that would not have affected the estimates pertaining to lower AFR values (see depo page
 22 314).

23 For example, he assumed that using a 1-50% range did not affect the produced AFR value
 24 estimate:

25 Depo page P. 314:

26 18Now, if I have a level in there and

27 19 the level will never be picked and ultimately that

28 20 level within the attribute will have a very low

1 21utility, but it doesn't bias the other levels, the
 2 22 other utility estimates, just what would – it
 3 23 just would be so outrageous that it's never been
 4 24 picked, so then it will have very low utility,
 5 25 negative utility potentially, because it's so bad,

6 77. But this claim is simply wrong. Consistent with a great deal of research, the range
 7 of values of an attribute has a major influence on its measured value. That is, the wider the range,
 8 the more valuable and "important" the attribute appears to be.³⁵

9 78. It is also noteworthy that Mr. Boedeker misused his "pre-test." In addition to
 10 effectively excluding some of the most important attributes identified in the pilot study (e.g.,
 11 capacity, brand), he changed the meaning of "reliability" without offering any justification. In the
 12 pilot study, "reliability" was one of the important attributes. However, Seagate's product
 13 description for the HD at issue listed seven features under "reliability/data integrity," with AFR
 14 being just one of them (see the data sheet used in my survey). Yet, Mr. Boedeker did not include
 15 in his study the seven reliability-related features; instead, he led respondents to only consider
 16 AFR, which further inflated the measured impact of AFR (as compared to a study that listed all
 17 seven reliability-related aspects), and he omitted capacity altogether, which his "pre-test" showed
 18 to be the most frequently named feature by potential purchasers.

19 **A Summary of Flaws that Made the Boedeker Conjoint Exercise Unreliable and Biased**

20 79. Consistent with the above review of survey principles and the impact of specific
 21 biases, the Boedeker conjoint exercise suffered from the following biases:

22 a. Focalism bias: As explained above, the decision to focus on AFR and a
 23 couple of other differentiating attributes (each with a limited range) predetermined that AFR
 24 would appear to be the most influential and valued.

27 ³⁵ See, for example, P. Verlegh et al., *Range and Number-of-Levels Effects in Derived and Stated Measures of*
 28 *Attribute Importance*," Marketing Letters, 41-52 (2002); see also: <http://acrwebsite.org/volumes/6854/volumes/v15/NA-15>; <http://acrwebsite.org/volumes/6128/volumes/v10/NA-10>

1 b. The survey effectively led respondents to consider AFR even if most actual
2 buyers do not even consider this attribute.

3 c. Respondents were not provided with any other (option-differentiating)
4 information pertaining to the performance and reliability of the HD.

5 d. The survey suffered from severe “demand effects” (as explained above),
6 whereby respondents were clearly expected to make their choices based largely on the presented
7 features that differentiated the presented options in each choice set, especially the wide-ranging
8 AFR values.

9 e. The conjoint design omitted key attributes, such as capacity, software, ease
10 of use, and brand name; as explained above, even if one were to suggest that a conjoint or any
11 other study can generate the (absolute) dollar value of a certain difference on the AFR dimension,
12 such estimates are necessarily unreliable if brand names and other key features are excluded, as
13 was done by Mr. Boedeker.

14 f. Mr. Boedeker failed to report the frequency of illogical choices (e.g.,
15 choosing option 1 over 2 in the example on page 40 of his report). I requested the data needed to
16 determine the number of such illogical answers, which are an indicator of the level of (in)attention
17 of respondents. Spreadsheets were finally provided the day this declaration is due, which I have
18 not had the opportunity to analyze. In any event, Mr. Boedeker should have done the analysis
19 himself.

20 g. The Boedeker study did not include any controls.

21 h. The Boedeker Survey’s results were not validated.

1 I declare under penalty of perjury under the laws of the United States of America
2 that the foregoing is true and correct.

3 Executed this 5th day of January, 2018, at Miami, Florida.
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Itamar Simonson, Ph.D.
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EXHIBIT A

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ADDRESSES

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EDUCATION

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Duke University, Fuqua School of Business
Major: Marketing; May 1987

M.B.A.

UCLA, Graduate School of Management
Major: Marketing; March 1978

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Hebrew University, Jerusalem, Israel
Major: Economics, Political Science; August 1976

ACADEMIC POSITIONS

July 1987 - June 1993 University of California, Berkeley
Haas School of Business
Assistant Professor

July 1993 – Aug. 1996 Stanford Graduate School of Business
Associate Professor of Marketing

Sept. 1996 – Aug. 1999 Stanford Graduate School of Business
Professor of Marketing

Sept. 1999 – Present Stanford Graduate School of Business
Sebastian S. Kresge Professor of Marketing

1994 – 2000 Stanford Graduate School of Business
Marketing Group Head

2000, 2004, 2012 Visiting Professor of Marketing: MIT; NYU; Columbia

AWARDS

- Best Article in the *Journal of Consumer Research* during the period 1987-1989.
- The 1997 O'Dell Award (for the *Journal of Marketing Research* article that has had the greatest impact on the marketing field in the previous five years).
- The 2001 O'Dell Award.
- Honorary Doctorate: University of Paris II – Sorbonne Universities.
- The American Marketing Association Best Book in Marketing Award.
- Elected Fellow of the Association for Consumer Research.
- The 2007 Society for Consumer Psychology Distinguished Scientific Achievement Award.
- Finalist for the O'Dell Award: 1995; 2002; 2004; 2005; 2007; 2008; 2012.
- Best Article in the *Journal of Public Policy & Marketing* during the period 1993-1995.
- The 2016 Association for Consumer Research Conference Best Paper Award.
- The 2002 American Marketing Association Award for the Best Article on Services Marketing.
- The Association for Consumer Research 1990 "Ferber Award."
- Finalist for the 2003 Paul Green Award (for the *Journal of Marketing Research* article with the greatest potential to contribute to the practice of marketing research).
- Runner-up for the 2005 *Journal of Consumer Research* Best Article Award.
- Winner in the Marketing Science Institute and Direct Marketing Association competition on "Understanding and Measuring the Effect of Direct Marketing."
- Runner-up for the 1993 *California Management Review* Best Article Award.
- National Science Foundation Grant (for 1996-8).
- Outstanding Reviewer Award, *Journal of Consumer Research*, 2005, 2009.
- Honorable Mention for the Sloan Executive Program Teaching Award.

TEACHING EXPERIENCE

Stanford University:

Marketing Management (for MBAs and the Sloan Executive Program)
Marketing to Businesses (for MBAs); Technology Marketing (for MBAs)
Critical Analytical Thinking (for MBAs)
Research Methods for Studying Consumer Behavior (a Ph.D. Course)
Behavioral Decision Making (a Ph.D. Course)
Consumer Behavior (a Ph.D. course)

University Of California, Berkeley:

MBA, Ph.D. and Executive Education Classes on Marketing Management and Consumer Behavior.

BUSINESS EXPERIENCE

October 1978-August 1983 Motorola, Inc.

Worked in an international subsidiary; responsibilities included marketing research and customer analysis, definition of new products, pricing, analysis of sales force performance, competitive intelligence, and forecasting. Conducted studies of markets for various communications products. Last two years served as Product Marketing Manager for communications products.

Consulting:

Consulted for clients from a wide range of industries such as technology, communications, services, and manufacturing sectors.

Expert witness assignments: trademark infringement, deceptive advertising, surveys, consumer behavior, marketing management, branding, retailing, distribution, assessment of demand drivers and feature value, and other marketing issues.

PUBLICATIONS

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ARTICLES UNDER REVIEW/REVISION

Franklin Shaddy, Ayelet Fishbach, and Itamar Simonson (2016), "Distinctions without a difference: How seemingly unrelated choice effects all reflect the willingness-to-make tradeoffs."

Haiyang Yang, Ziv Carmon, and Itamar Simonson, "The Preference for Practical Knowledge: Its Conceptualization, Measurement, and Ability to Predict Consumer Behaviors."

Wendy Liu and Itamar Simonson, "Shortlisting – Not Overwhelmed But Biased."

Aner Sela and Itamar Simonson, "The Feeling of Preference: Preference Expression in the Absence of Preferences."

Ioannis Evangelidis, Jonathan Levav, and Itamar Simonson (2017), "Single Option Aversion."

Doctoral Dissertations Chaired:

Ravi Dhar (Chaired Professor, Yale U.)

Aimee Drolet (Chaired Professor, UCLA)

Stephen Nowlis (Chaired Professor, Washington U., St. Louis)

Ziv Carmon (Chaired Professor, INSEAD)

Ran Kivetz (Chaired Professor, Columbia U.)

Donnel Briley (Professor, U.O. Sydney)

Thomas Kramer (Tenured Associate Professor, U.O. South Carolina)

Wendy Liu (Tenured Associate Professor, U.O. Calif., San Diego)

Sanjay Sood (Tenured Professor, UCLA)

Song-Oh Yoon (Assistant Professor, Korea U.)

Michal Maimaran (Clinical Assistant Professor, Kellogg School)

Leilei Gao (Assistant Professor, Chinese University, Hong Kong)

Aner Sela (Assistant Professor, U. O. Florida)

Jonah Berger (Tenured Associate Professor, Wharton School, U.O. Penn.)

EDITORIAL ACTIVITIES

Editorial Boards: *Journal of Marketing Research*, *Journal of Consumer Psychology*, *Journal of Marketing*, *Journal of Consumer Research*, *Journal of Behavioral Decision Making*, *International Journal of Research in Marketing*, *Journal of Marketing in Emerging Economies*, *Marketing Letters*, *Journal of Academy of Marketing Science*, *Review of Marketing Research*.

Reviewer for *Marketing Science*, *Journal of Economic Behavior and Organization*, *Science*, *Management Science*, *Journal of Retailing and Consumer Services*, *Journal of Marketing*, *Journal of Retailing*, *Organizational Behavior and Human Decision Processes*, *Journal of Experimental Psychology*, *Psychological Review*, *Psychological Bulletin*, *Journal of Personality and Social Psychology*, *Psychological Science*, *California Management Review*, *Journal of Economic Psychology*, *European Journal of Social Psychology*, *Journal of Judgment and Decision Making*, *Medical Decision Making*, and National Science Foundation.

PROFESSIONAL AFFILIATIONS

Association for Consumer Research
Judgment and Decision Making Society
American Psychological Society

EXHIBIT B

EXHIBIT B

Cases in which Dr. Itamar Simonson Testified as an Expert at Trial or by Deposition in the Past
Four Years

1. GeoTag, Inc. v. AT&T et al. (Nor. Dist. of Texas, Dallas Div.; 2:10-CV-570) (deposition)
2. Poquito Mas Licensing Corp. v. Taco Bell Corp. (Cent. Dist. of CA; 8:13-CV-01933) (deposition)
3. Whirlpool Corp. Front-Loading Washer Products Liability Litigation (Nor. Dist. Ohio; 1:08-wp-65000; MDL 2001) (trial)
4. Playtex Products, LLC v. Munchkin, Inc. (Cent. Dist. CA; CASE NO. CV 11-0503 AHM (RZX) (trial)
5. SRI International, Inc. v. Cisco Systems, Inc. (US Dist. of Del., 13-1534) (deposition)
6. Fage Dairy Processing Industry, S.A. v. General Mills, Inc. (Nort. Dist. of NY; 6:11-cv-01174) (deposition)
7. Fox Broadcasting Company et al. v. Dish Network (Cent. Dist. of CA; 12-04529) (deposition)
8. Skye Astiana et al. v. Kashi Company (South. dist. of CA; 11-CV-1967-HBGS) (deposition)
9. Bank of America v. Trilegiant Corp. & Affinion Group (Arbitration, Reference # 01-14-0000-4517) (Arbitration testimony)
10. Larry Butler et al. v. Sears, Roebuck and Co. (Nor. Dist. of IL, Eastern Div., 06-CV-7-23) (Deposition)
11. Car Freshner v. Exotica Fresheners (SDNY; 14-CV-391) (Trial)
12. Laura McCabe et al. v. Six Continents Hotels, Inc. (No. Dist. of CA, SF Div., 12-cv-04818 NC) (deposition).
13. RPI v. Apple Inc. (No. Dist. of NY, Albany Div.; 1:13-CV-633) (deposition)
14. WNET, ABC et al. (Broadcast networks) v. Aereo, Inc. (SDNY; 12-cv-1540)
15. Western Sugar Cooperative et al. v. Archer-Daniels-Midland Company et al. (Cent. Dist. of CA, CV11-3473-CBM) (Trial)
16. Sazerak Company, Inc. v. Fetzer Vineyard, Inc. (N. D. of CA; 3:15-cv-04618) (trial)

17. Lena Thodos et al. v. Nicor, Inc. et al. (Circuit Ct. of Cook County, IL, Chancery Div.; 11 CH06556) (Deposition).
18. Christopher Corcoran et al. v. CVS Pharmacy (Nor. Dis. of CA; 15-CV-3504) (deposition)
19. Intellectual Ventures II v. AT&T Mobility et al. (Dist. of Del.; 13-cv-1631) (Deposition)
20. Lights Out Holdings and Shawne Merriman v. Nike, Inc. (South. Dist. Of CA, 3:14-cv- 00872-JAH-NLS) (Deposition)
21. Koninklijke Philips Electronics N.V. v. Hunt Control Systems (Dist. of NJ, 11-03684) (Trial).
22. Valador, Inc. v. HTC Corp. (East. Dist. of VA; 1:16-cv-1162).
23. Beaulieu Group v. Mohawk Industries (N. D. of Georgia, Rome Div.; 4:15 – cv-00124) (Deposition).
24. Adidas America, Inc. et al. v. Skechers USA, Inc. (Dist. of Oregon, Portland Div.; 3:15-cv-01741) (Deposition)
25. B Property Management, Inc., et al. v. Goodman Global (Middle Dist. of FL; 3:12-CV-1366-HES-JBT) and Anne McVicar et al., v. Goodman Global (Cent. Dist. of CA; 8:13-cv-13-01223-DOC-RNB) (deposition)
26. Exxon Mobil Corp. v. FX Networks et al. (South. Dist. of TX; 4:13– CV–02906) (Deposition)
27. Car Freshner Corp. v. Crocs, Inc. (Nor. Dist. of NY; 7:16-cv-0068) (Deposition)
28. State of Arizona et al. v. Volkswagen AG et al. (Sup. Ct. of Ariz., Maricopa County; CV-2016-005112) (deposition).
29. Jack Daniel’s Properties v. VIP (US Dist. of Ariz., CV 14-02057) (Trial).
30. Versata Software, Inc. v. Zoho Corp. (W.D. Texas; 1:13-00371) (Deposition)
31. DRAL Enterprises v. North Atlantic Operating Company (Nor. Dist. of IL, East. Div.; 1:16-cv-08384) (deposition).
32. Oracle America, Inc. v. Google Inc. (No. Dist. of CA; C 10-03561) (Deposition.
33. TrueCar, Inc. v. Sonic Automotive, Inc. (Cent. Dist. of CA, West. Div.; 13-cv-05812) (Deposition).
34. World Trade Centers Association, Inc. v. The Port Authority of New York and New Jersey (So. Dist. of NY; 15-cv-7411) (deposition).
35. TCL Communication Technology Holdings v. Telefonaktoebol LM Ericsson, et al. (Cent. Dist. of CA, 8:14-CV-00341 JVS-DFMx) (Trial).

36. Margarita Delgado, et al. v. Ocwen Loan Servicing et al. (East. Dist. of NY; 1:13-cv-04427) (Deposition).
37. (on behalf of Sound Exchange) In the Matter of Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services (United States Copyright Judges, Washington, D.C., trial).
38. Adidas America, Inc. et al. v. TRB Acquisitions et al. (Dist. of Oregon; 3:15-cv-02113-SI) (deposition)
39. THX LTD. v. Apple Inc. (Nor. Dist. of CA; 3:16-cv-01161) (deposition).

EXHIBIT C

MATERIALS RELIED UPON OR CONSIDERED

Federal Pleadings, Motions, & Deposition Transcripts

Second Consolidated Amended Complaint, *In re Seagate Technology LLC Litigation*, No. 5:16-cv-00523-RMW (N.D. Cal. June 11, 2016), ECF No. 62.

Plaintiffs' Notice of Motion and Motion for Class Certification, *In re Seagate Technology LLC Litigation*, No. 5:16-cv-00523-RMW (N.D. Cal. Nov. 8, 2017), ECF No. 135.

Declaration of Andrew Hospdor in Support of Plaintiffs' Motion for Class Certification, *In re Seagate Technology LLC Litigation*, No. 5:16-cv-00523-RMW (N.D. Cal. Nov. 8, 2017), ECF No. 133-5.

Declaration of Stefan Boedeker in Support of Plaintiffs' Motion for Class Certification, *In re Seagate Technology LLC Litigation*, No. 5:16-cv-00523-RMW (N.D. Cal. Nov. 8, 2017), ECF No. 133-4.

Corrected Declaration of Stefan Boedeker in Support of Plaintiffs' Motion for Class Certification, *In re Seagate Technology LLC Litigation*, No. 5:16-cv-00523-RMW (N.D. Cal. Nov. 20, 2017), ECF No. 146-1 (including documents and spreadsheets referenced in Appendix: Results of Boedeker's Conjoint Analysis for Different Sub-Samples Purchasers of Seagate Hard Drives – No Monotonicity Constraint; Purchasers of Other Hard Drives – Monotonicity Constraint; and Purchasers of Other Hard Drives – No Monotonicity Constraint).

Deposition Transcript of Stefan Boedeker & Exhibits (Dec. 12, 2017) (including Screenshots of Consumer Survey).

State Court Documents

Seagate's Opposition to Motion for Class Certification, *Pozar v. Seagate Technology LLC*, CGC-15-547787 (S.F. Super. Ct. Aug. 10, 2017).

Seagate's Objections to Evidence, *Pozar v. Seagate Technology LLC*, CGC-15-547787 (S.F. Super. Ct. Aug. 10, 2017).

Seagate's Opposition to Plaintiffs' Supplemental Response to Its Objections to Evidence Filed in Support of Plaintiffs Motion for Class Certification, *Pozar v. Seagate Technology LLC*, CGC-15-547787 (S.F. Super. Ct. Oct. 19, 2017).

Order Granting in Part Plaintiffs' Motion for Class Certification, *Pozar v. Seagate Technology LLC*, CGC-15-547787 (S.F. Super. Ct. Nov. 1, 2017).

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Dipankar Chakravarti & John G. Lynch, Jr., *A Framework for Exploring Context Effects on Consumer Judgment & Choice* (1983), <http://acrwebsite.org/volumes/6128/volumes/v10/NA-10> (last visited Jan. 4, 2018).

Scholarly Publications, Articles, & Treatises

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Irwin Levin & Gary Gaeth, *How Consumers Are Affected by the Framing of Attribute Information Before and After Consuming the Product*, 15 J. of Consumer Res. 374-378 (1988).

4 J. Thomas McCarthy, *McCarthy on Trademarks & Unfair Competition* §§ 32:163, 32:174 (2007).

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Case Law

Apple, Inc. v. Samsung Elecs. Co., Ltd., No. 11-CV-01846-LHK, 2014 WL 976898 at *11-16 (N.D. Cal. Mar. 6, 2014).

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TCL Comm'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson, No. CV 15-2370 JVS (DFMx), 2017 WL 6611635, at *29 (C.D. Cal. Dec. 12, 2017).

TV Interactive Data Corp. v. Sony Corp., 929 F. Supp. 2d 1006 (N.D. Cal. 2013).

Visteon Glob. Techs., Inc. v. Garmin Int'l, Inc., 10-CV-10578, 2016 WL 5956325, at *6 (E.D. Mich. Oct. 14, 2016).

EXHIBIT D

#103-17128 COMPUTER HARDWARE SURVEY

SPECS

N=420--2 CELLS OF 210 EACH

PER CELL: 50% MALES/50% FEMALES; 18+ YEARS OF AGE, NO AGE QUOTAS

EXHIBITS TO BE SHOWN IN CELLS:

CELL 1.....()—Product Data Sheets 1A and 1B (AFR <1%), N=210

CELL 2.....()—Product Data Sheets 2A and 2B (AFR <8%), N=210

#103-17128 COMPUTER HARDWARE SURVEY

SCREENER

(QUESTION 10)

Today we are interviewing people about computer hardware and accessories. Please take a few moments to complete our questions; we are sure you will find it interesting.

{PROGRAMMING NOTE: GENDER QUOTA PER CELL: 50% MALES AND 50% FEMALES}

(QUESTION 15)

What is your gender? **(Select one response)**

1: Male [50%]

2: Female [50%]

{PROGRAMMING NOTE: NO AGE QUOTAS; IF RESPONSE “UNDER 18”, TERMINATE}

(QUESTION 20)

Please enter your age: _____

{PROGRAMMING NOTE: NO REGION QUOTAS BUT MUST LIVE IN THE US}

(QUESTION 25)

In which state do you live? **[INSERT DROP DOWN LIST]**

(QUESTION 30)

Which of the following devices are you using right now to take this survey? **(Select one response)**

- 1 Desktop computer → [SKIP TO Q.40]
- 2 Laptop computer → [SKIP TO Q.40]
- 3 Tablet (such as an iPad, Android tablet, etc.) → [SKIP TO Q.40]
- 4 Cell phone (not a smartphone) → [ASK Q.35]
- 5 Smartphone → [ASK Q.35]
- 6 Other mobile device → [ASK Q.35]

(QUESTION 35)

This survey may or may not be compatible with cell phones, smartphones or other mobile devices, so please use your tablet, or desktop or laptop computer to complete this survey. To complete this survey, please re-try your invitation link using your tablet, or desktop or laptop computer. ***{TERMINATE INTERVIEW.}***

(QUESTION 40)

{Response 4 ('None of these'), must be selected to continue. Otherwise, terminate.}

Do you, or does any member of your household currently work for any of the following? **(Select all that apply)**

- 1: An advertising, public relations or marketing agency or advertising department of a company
- 2: A market research firm or a marketing research department of a company
- 3: A company that makes computer hardware or accessories
- 4: None of these **[Single response-CONTINUE]**

(QUESTION 45)

Please carefully read the following descriptions:

External Hard-drive:

An external hard-drive is a portable storage device that can be attached to a computer through a USB or other cable connection, or wirelessly. External hard drives typically have high storage capacities and are often used to back up computers or serve as a network drive.

Internal Hard-drive:

An internal hard-drive is a storage device located inside a computer system. Although the computer you purchase has one or more hard-drives initially, it is possible to purchase one or more additional hard-drives later and have them installed inside the computer or the NAS (Network Attached Storage) after your initial purchase.

(Please continue when you are ready.)

(QUESTION 50)

{Response 1 ('Yes, I have'), must be selected to continue. Otherwise, terminate.}

Have you purchased an external or internal hard-drive in the past six years? Please count hard drives that were part of a Network Attached Storage (NAS) device but do not count hard drives that were pre-installed or part of a computer package that you bought.

(Select one response)

- 1: Yes, I have
- 2: No, I have not
- 3: Don't know/Not sure

(QUESTION 55)

{Response 1 ('I made the decision') OR 2 ('I was involved but was not the primary decision maker'), must be selected to continue. Otherwise, terminate.}

Considering any hard-drive(s) that you purchased during the past six years, please indicate the following: **(Select one response)**

- 1: I made the decision
- 2: I was involved but was not the primary decision maker
- 3: I was not involved in the decision making process
- 4: Don't know/ Not sure

(QUESTION 60)

{Response 2 ('For personal, non-business use only') OR 3 ('For personal and business use'), must be selected to continue. Otherwise, terminate.}

Please select the one statement that best applies for any hard-drive(s) that you purchased in the past six years.

I purchased an external or internal hard-drive ...(Select one response)

- 1: For business use only
- 2: For personal, non-business use only
- 3: For personal and business use
- 4: Don't know/ Not sure

(QUESTION 65)

{PROGRAMMER: RANDOMIZE ORDER OF ANSWER RESPONSES 1-4}

{Response 1 ('Seagate') AND/OR 2 ('Western Digital (WD)') AND/OR 4 ('Toshiba') must be selected to continue. Otherwise, terminate.}

Which of the following hard-drive brand(s) have you purchased in the past six years? (Select all that apply)

- 1: Seagate
- 2: Western Digital (WD)
- 3: HGST, or its predecessors Hitachi Global Storage Technologies or Hitachi
- 4: Toshiba
- 5: Other (please specify): _____
- 6: Don't know/ Not sure [SINGLE RESPONSE]

(QUESTION 70)

{If Response 6 ('Other') OR 7 ('Don't know/Not sure') selected, terminate. All other responses, continue.}

What capacity external or internal hard-drive(s) did you purchase in the past six years? (Select all that apply)

- 1: 1 TB
- 2: 2 TB
- 3: 3 TB
- 4: 4 TB
- 5: 5 TB
- 6: Other
- 7: Don't know / Not sure [SINGLE RESPONSE]

(QUESTION 75)

{If Response 9 ('Other') selected, terminate. All other responses, continue.}

What year was your most recent purchase of an external or internal hard drive which was 1 to 5 TB capacity? (Select one response)

- 1: 2017
- 2: 2016
- 3: 2015
- 4: 2014
- 5: 2013
- 6: 2012
- 7: 2011
- 8: Don't remember exact year but was within past 6 years
- 9: Other

(QUESTION 80)

{PROGRAMMER: COLLECT NAME AND PHONE NUMBER BUT DO NOT TERMINATE IF RESPONDENT DOES NOT GIVE NAME AND PHONE NUMBER}

Thank you, you qualify for this study.

Please provide us with your name and phone number so we can call you to verify that you participated in this survey.

Your name and phone number and your responses to this survey will be kept completely confidential. We will not be calling to sell you anything; we will only call to verify your participation.

Please record your name and phone number below:

Name_____

Phone Number: (__ __ __) __ __ __ - __ __ __ __

(QUESTION 100)

If you wear eyeglasses or contacts while using the computer, can you please put them on now?

Draft 12-6-17

#103-17128 COMPUTER HARDWARE SURVEY

MAIN QUESTIONNAIRE

(QUESTION 150)

RECORD CELL APPLIED TO:

CELL 1.....()—Product Data Sheets 1A and 1B, (AFR <1%), N=210

CELL 2.....()—Product Data Sheets 2A and 2B (AFR <8%), N=210

(QUESTION 200)

First, for each question, if you don't know or don't have an answer, please don't guess, just indicate that you "don't know" or "don't have an answer" by typing in the words "don't know" and it will go on to the next question. Also, you should complete this survey without stopping in the middle, and please make sure not to consult anyone and not open another browser while working on this survey.

(QUESTION 210)

Please review the following product data sheets as you would if you were actually considering buying a hard-drive. Make sure to review all the product information, specs, and any other information.

(QUESTION 220)

{PROGRAMMER: INSERT APPROPRIATE DATA SHEET 1A or 2A}

First, please review the information on this first product data sheet. You may need to scroll down to see the entire page. When you are done, click on the >> at the bottom of the page to continue.

(QUESTION 230)

{PROGRAMMER: INSERT APPROPRIATE DATA SHEET 1B or 2B}

Now, please review the information on this second product data sheet. You may need to scroll down to see the entire page. When you are done, click on the >> at the bottom of the page to continue.

{Programming note: Please create 2 separate links on the bottom of the screen for each question 250-265 for respondent to go back to view the product data sheets from Q220 and Q230 if they should wish to.}

Links should say:

"If you would like to view the FIRST product data sheet" again, please click here"

"If you would like to view the SECOND product data sheet" again, please click here"

For the links that bring up the popup page:

At the top of each page it should say: "Click on the "X" to return to the question with an → pointing to the "X"

(QUESTION 240)

You can go back and review again the product data sheets you saw by clicking on the appropriate link at the bottom of each screen.

**{½ THE RESPONDENTS IN EACH CELL WILL BE ASKED Q.250A AND ½ WILL BE ASKED Q.250B}
(QUESTION 250A)**

Assuming you were considering buying this type of hard-drive and the product costs approximately \$79.00, how likely or unlikely would you be to buy the hard-drive shown on the product data sheets you just saw? – Would you say that you would Definitely buy it, you would Probably buy it, you May or May Not buy it, you would Probably Not buy it, or you would Definitely Not buy it? **(Select one response)**

“If you would like to view the FIRST product data sheet” again, please click here”

“If you would like to view the SECOND product data sheet” again, please click here”

- 1: Definitely buy it
- 2: Probably buy it
- 3: May or may not buy it
- 4: Probably not buy it
- 5: Definitely not buy it

(QUESTION 250B)

Assuming you were considering buying this type of hard-drive and the product costs approximately \$79.00, how likely or unlikely would you be to buy the hard-drive shown on the product data sheets you just saw? – Would you say that you would Definitely not buy it, you would Probably not buy it, you May or May Not buy it, you would Probably buy it, or you would Definitely buy it? **(Select one response)**

“If you would like to view the FIRST product data sheet” again, please click here”

“If you would like to view the SECOND product data sheet” again, please click here”

- 5: Definitely not buy it
- 4: Probably not buy it
- 3: May or may not buy it
- 2: Probably buy it
- 1: Definitely buy it

(QUESTION 260)

What makes you say that you would **(INSERT ANSWER FROM Q250a/Q250b)**? Please type your answer below. Please be specific and include details.

“If you would like to view the FIRST product data sheet” again, please click here”

“If you would like to view the SECOND product data sheet” again, please click here”

(QUESTION 265)

Any other reason that you would **(INSERT ANSWER FROM Q250a/Q250b)**? Please type your answer below. Please be specific and include details.

“If you would like to view the FIRST product data sheet” again, please click here”

“If you would like to view the SECOND product data sheet” again, please click here”

(QUESTION 270)

In general, what have been the main uses of the hard-drive(s) you bought in the past six years? Please type your answer below. Please be specific and include details.

(QUESTION 275)

{Programmer: Q275 CAN BE BLANK, IF SO, SKIP TO Q280}

Any other hard-drive uses? Please type your answer below. Please be specific and include details.

(QUESTION 280)

In general, what features or characteristics of hard-drives do you consider most important when deciding which hard-drive to buy? Please type your answer below. Please be specific and include details.

(QUESTION 285)

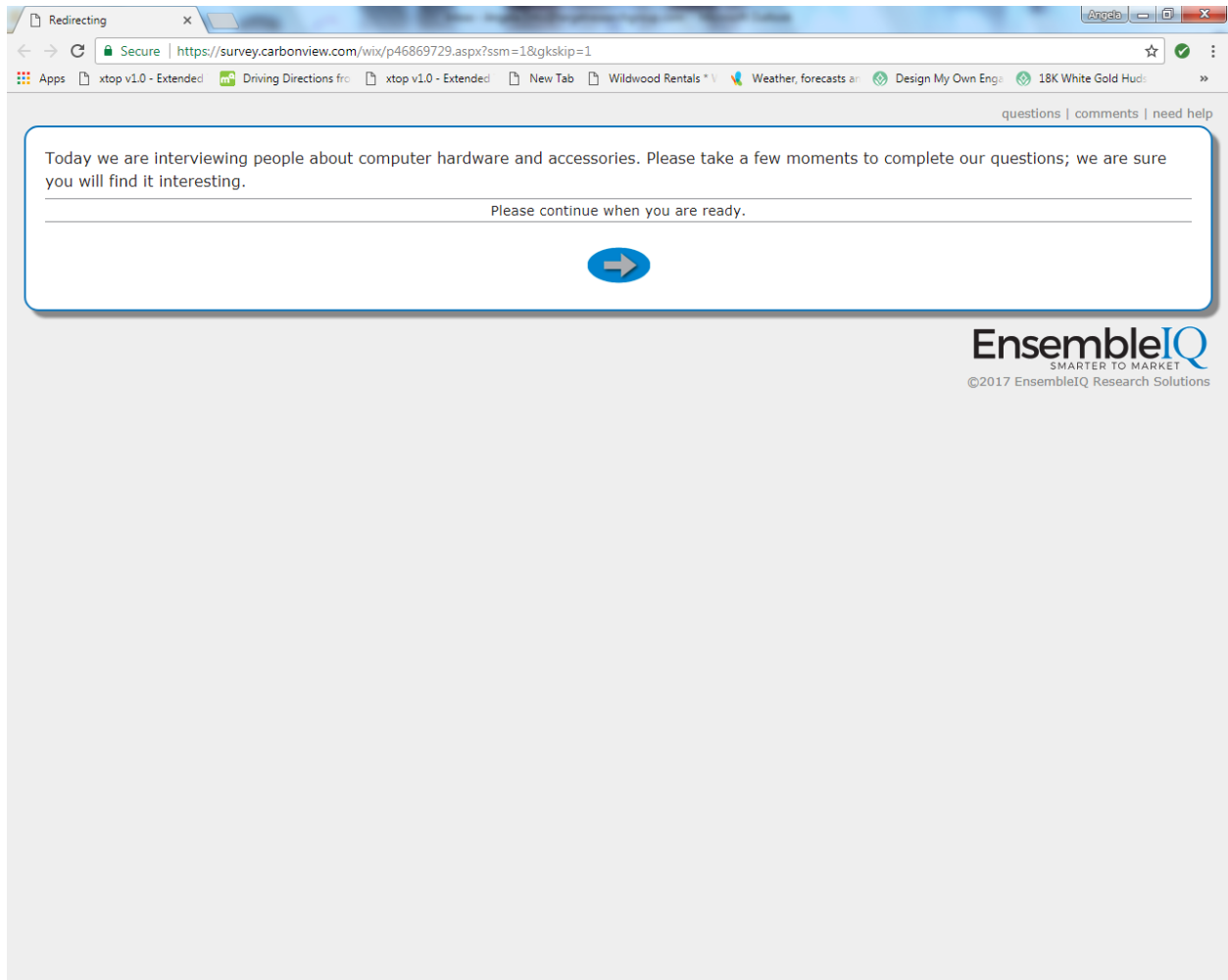
{Programmer: Q285 CAN BE BLANK, IF SO, SKIP TO Q300}

Any other hard-drive features or characteristics that you consider important when deciding which hard-drive to buy? Please type your answer below. Please be specific and include details.

(QUESTION 300)

Those are all of our questions. Thank you for your time.

EXHIBIT E1



https://survey.carbonview.com/wix/p46869729.aspx

Secure | https://survey.carbonview.com/wix/p46869729.aspx

Apps xtop v1.0 - Extended Driving Directions from xtop v1.0 - Extended New Tab Wildwood Rentals * Weather, forecasts and Design My Own Engine 18K White Gold Hud


questions | comments | need help

What is your gender?

Please select one answer.

☐ Male

☐ Female



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Please enter your age:

Please enter a whole number.



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In which state do you live?

Please select one answer.

Please select your answer ▼

Please select your answer ▲

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana

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Which of the following devices are you using right now to take this survey?

Please select one answer.

- ☐ Desktop computer
- ☐ Laptop computer
- ☐ Tablet (such as an iPad, Android tablet, etc.)
- ☐ Cell phone (not a smartphone)
- ☐ Smartphone
- ☐ Other mobile device



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questions | comments | need help

Do you, or does any member of your household currently work for any of the following?

Please select all that apply.

- ☐ An advertising, public relations or marketing agency or advertising department of a company
- ☐ A market research firm or a marketing research department of a company
- ☐ A company that makes computer hardware or accessories
- ☐ None of these

➔

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Please carefully read the following descriptions:

External Hard-drive:
An external hard-drive is a portable storage device that can be attached to a computer through a USB or other cable connection, or wirelessly. External hard drives typically have high storage capacities and are often used to back up computers or serve as a network drive.

Internal Hard-drive:
An internal hard-drive is a storage device located inside a computer system. Although the computer you purchase has one or more hard-drives initially, it is possible to purchase one or more additional hard-drives later and have them installed inside the computer or the NAS (Network Attached Storage) after your initial purchase.

Please continue when you are ready.



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Have you purchased an external or internal hard-drive in the past six years? Please count hard drives that were part of a Network Attached Storage (NAS) device but do not count hard drives that were pre-installed or part of a computer package that you bought.

Please select one answer.

☐ Yes, I have

☐ No, I have not

☐ Don't know/Not sure

→

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Considering any hard-drive(s) that you purchased during the past six years, please indicate the following:

Please select one answer.

☐ I made the decision

☐ I was involved but was not the primary decision maker

☐ I was not involved in the decision making process

☐ Don't know/ Not sure

➔

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Please select the one statement that best applies for any hard-drive(s) that you purchased in the past six years.

I purchased an external or internal hard-drive...

Please select one answer.

☐ For business use only

☐ For personal, non-business use only

☐ For personal and business use

☐ Don't know/ Not sure

→

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Which of the following hard-drive brand(s) have you purchased in the past six years?

Please select all that apply.

☐ Seagate


☐ Western Digital (WD)

☐ HGST, or its predecessors Hitachi Global Storage Technologies or Hitachi

☐ Toshiba

☐ Other (please specify):

☐ Don't know/ Not sure



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What capacity external or internal hard-drive(s) did you purchase in the past six years?

Please select all that apply.

☐ 1 TB

☐ 2 TB

☐ 3 TB

☐ 4 TB

☐ 5 TB

☐ Other

☐ Don't know / Not sure

→

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What year was your most recent purchase of an external or internal hard drive which was 1 to 5 TB capacity?

Please select one answer.

☐ 2017

☐ 2016

☐ 2015

☐ 2014

☐ 2013

☐ 2012

☐ 2011

☐ Don't remember exact year but was within past 6 years

☐ Other

→

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Thank you, you qualify for this study.


Please provide us with your name and phone number so we can call you to verify that you participated in this survey.

Your name and phone number and your responses to this survey will be kept completely confidential. We will not be calling to sell you anything; we will only call to verify your participation.

Please record your name and phone number below:

Name:

Phone Number:



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If you wear eyeglasses or contacts while using the computer, can you please put them on now?

Please continue when you are ready.

➔

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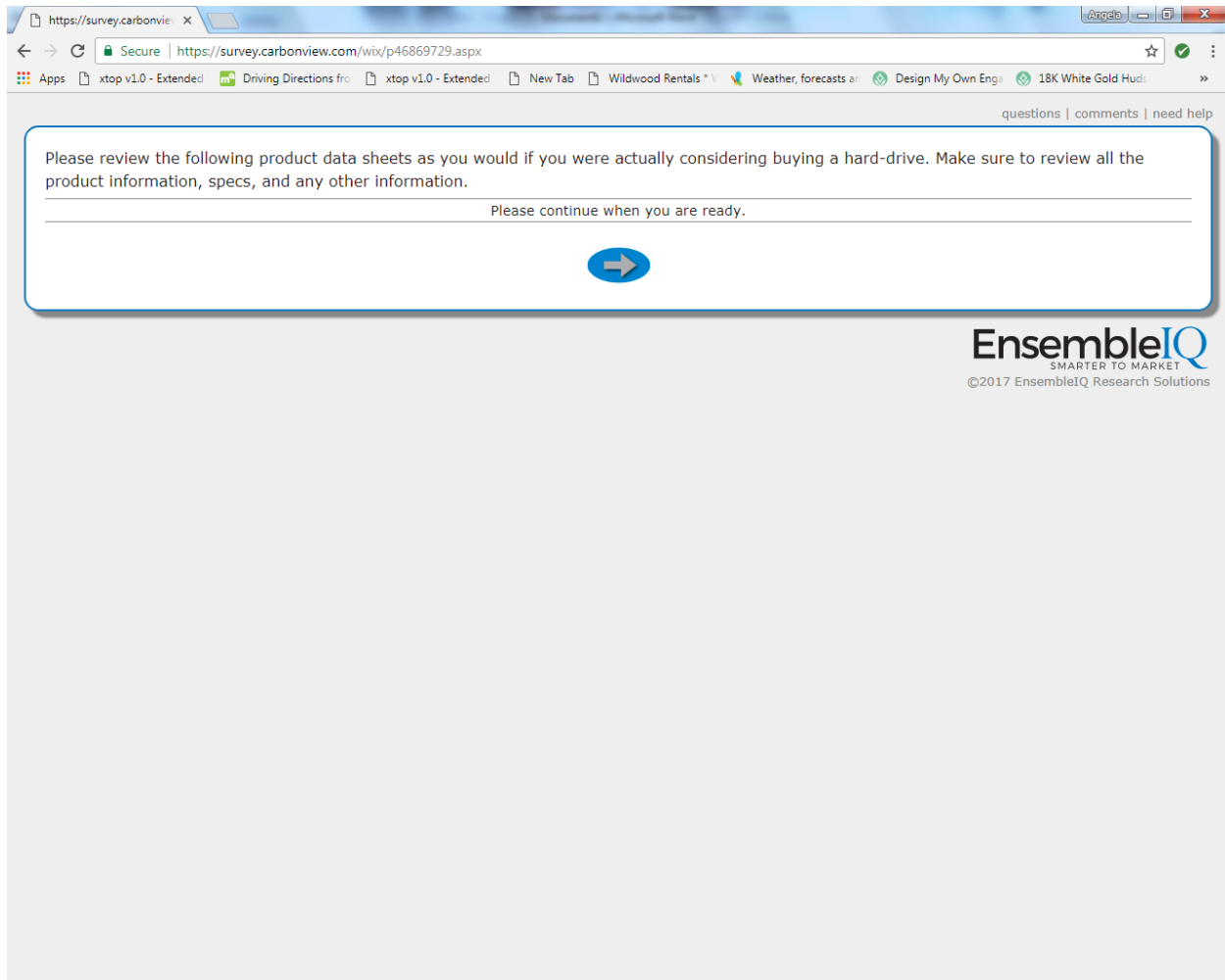
questions | comments | need help

First, for each question, if you don't know or don't have an answer, please don't guess, just indicate that you "don't know" or "don't have an answer" by typing in the words "don't know" and it will go on to the next question. Also, you should complete this survey without stopping in the middle, and please make sure not to consult anyone and not open another browser while working on this survey.

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First, please review the information on this first product data sheet. You may need to scroll down to see the entire page. When you are done, click on the >> at the bottom of the page to continue.



Desktop HDD

Data Sheet

The Power of One

- Seagate brings over 30 years of trusted performance and reliability to the Seagate® Desktop HDDs—now available in capacities up to 5TB
- Increase your capacity and drive down costs with up to 1.33TB-per-disk hard drive technology
- SATA 6Gb/s interface optimizes burst performance
- Seagate AcuTrac™ servo technology delivers dependable performance
- Free DiscWizard™ software enables high capacities on legacy PC BIOS systems
- Seagate Secure™ models provide hardware-based data security and deliver an Instant Secure Erase feature for safe, fast and easy drive retirement¹
- Seagate Secure models meet the NIST 800-88 media sanitization specification and also support the Trusted Computer Group (TCG) Opal standard¹



Best-Fit Applications

- Desktop or all-in-one PCs
- Home servers
- Entry-level direct-attached storage devices (DAS)

¹ Seagate Secure models are not available in all countries. May require TCG-compliant host or controller support.


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questions | comments | need help

Now, please review the information on this second product data sheet. You may need to scroll down to see the entire page. When you are done, click on the >> at the bottom of the page to continue.

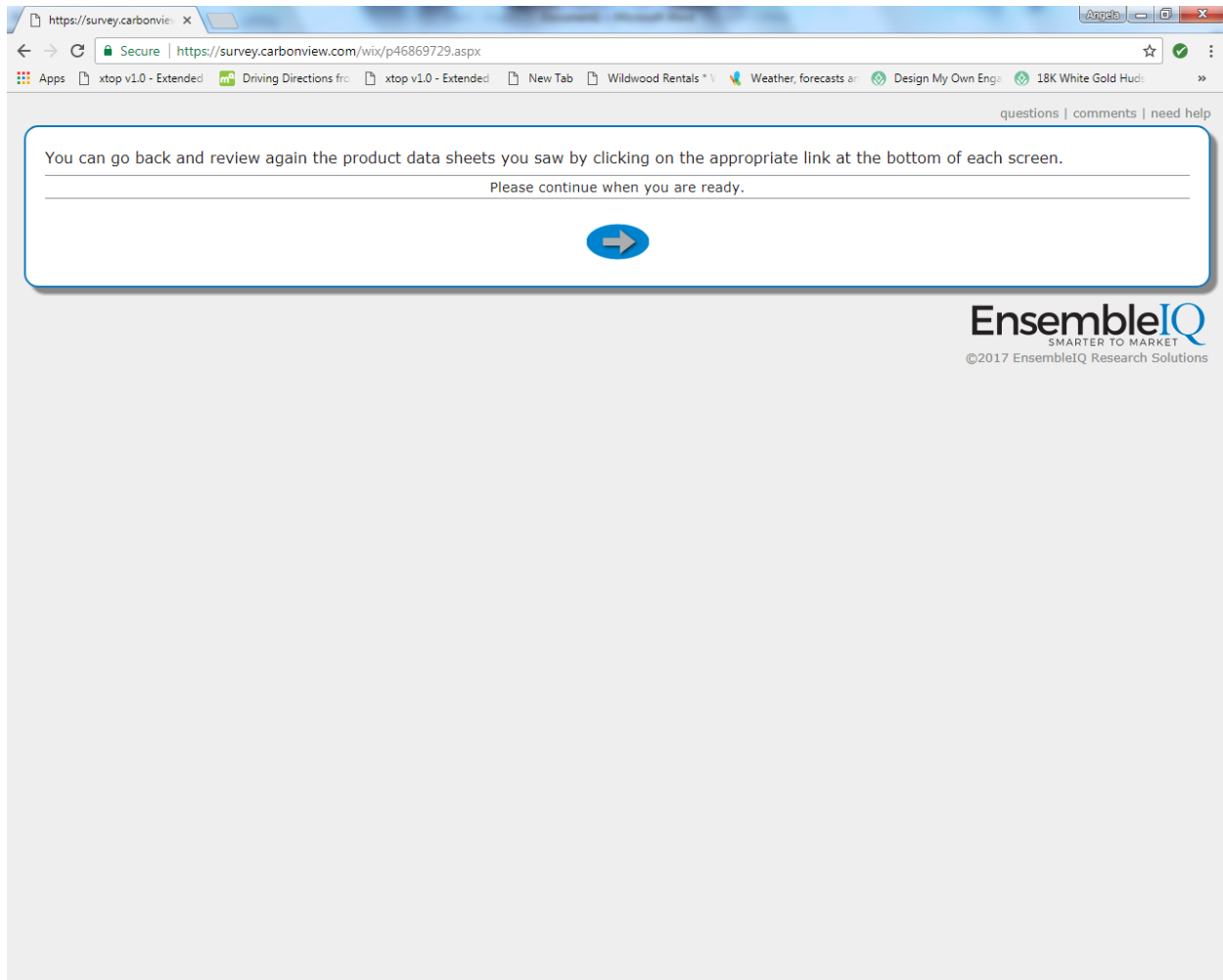


Desktop HDD



Specifications	3TB
Standard Model Numbers ¹	ST3000DM001
Seagate Secure™ Model Numbers	ST3000DM002
Interface	SATA 6Gb/s
Cache	64MB
Model Name	formerly Barracuda
Performance	
SATA Transfer Rates Supported (Gb/s)	6.0/3.0/1.5
Max Sustainable Transfer Rate	210MB/s
Configuration/Organization	
Heads/Disks	6/3
Bytes per Sector	512E
Voltage	
Voltage Tolerance, Inc. Noise (5V)	±5%
Voltage Tolerance, Inc. Noise (12V)	±10%
Reliability/Data Integrity	
Annualized Failure Rate (AFR)	<1%
Contact Start/Stop Cycles ²	—
Load/Unload Cycles ³	300,000
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E14
Workload Rate Limit (TB/year)	55
Power-On Hours	2,400
Warranty, Limited (years) ⁴	2
Power Management	
Startup Power (12V, A)	2.5
Average Operating Power	8W
Idle Average (W)	5.4W
Standby/Sleep Mode	0.75W/0.75W

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Assuming you were considering buying this type of hard-drive and the product costs approximately \$79.00, how likely or unlikely would you be to buy the hard-drive shown on the product data sheets you just saw? - Would you say that you would Definitely not buy it, you would Probably not buy it, you May or May Not buy it, you would Probably buy it, or you would Definitely buy it?

If you would like to view the FIRST product data sheet again, please [click here](#)
If you would like to view the SECOND product data sheet again, please [click here](#)

Please select one answer.


☐ Definitely not buy it

☐ Probably not buy it

☐ May or may not buy it

☐ Probably buy it

☐ Definitely buy it



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questions | comments | need help

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If you would like to view the FIRST product data sheet again, please [click here](#)
If you would like to view the SECOND product data sheet again, please [click here](#)

Please select one answer.

☐ Definitely buy it
☐ Probably buy it
☐ May or may not buy it
☐ Probably not buy it
☐ Definitely not buy it

→


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What makes you say that you would **definitely buy it**?

If you would like to view the FIRST product data sheet again, please [click here](#)
If you would like to view the SECOND product data sheet again, please [click here](#)

Please type your answer below. Please be specific and include details.




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Any other reason that you would **definitely buy it?**

If you would like to view the FIRST product data sheet again, please [click here](#)

If you would like to view the SECOND product data sheet again, please [click here](#)

Please type your answer below. Please be specific and include details.




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In general, what have been the main uses of the hard-drive(s) you bought in the past six years?

Please type your answer below. Please be specific and include details.

→

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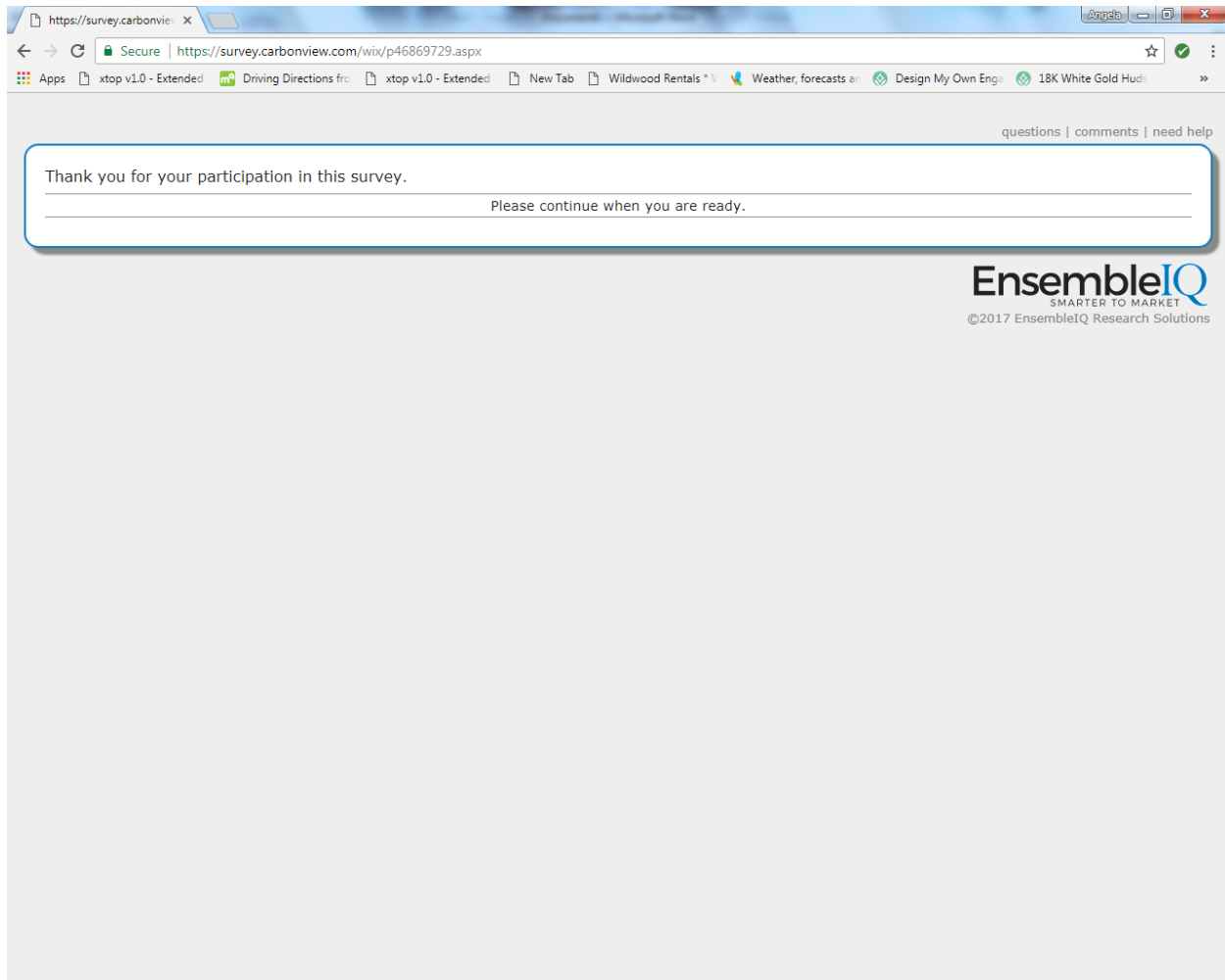
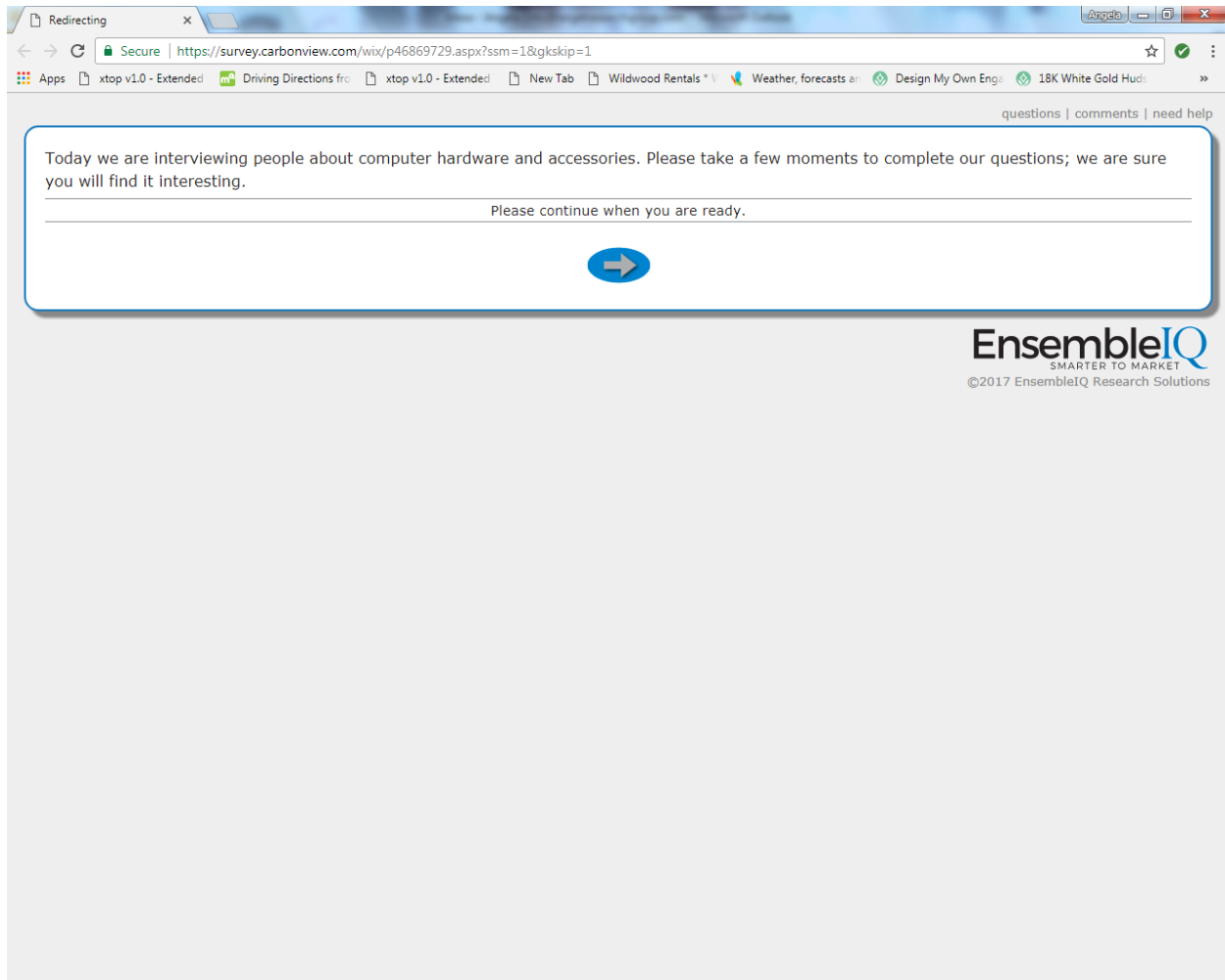


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What is your gender?

Please select one answer.

☐ Male

☐ Female

➔

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Please enter your age:

Please enter a whole number.



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In which state do you live?

Please select one answer.

Please select your answer ▼

Please select your answer ▲

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana

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- ☐ Cell phone (not a smartphone)
- ☐ Smartphone
- ☐ Other mobile device



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Do you, or does any member of your household currently work for any of the following?

Please select all that apply.

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- ☐ A market research firm or a marketing research department of a company
- ☐ A company that makes computer hardware or accessories
- ☐ None of these

➔

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Please carefully read the following descriptions:

External Hard-drive:
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Internal Hard-drive:
An internal hard-drive is a storage device located inside a computer system. Although the computer you purchase has one or more hard-drives initially, it is possible to purchase one or more additional hard-drives later and have them installed inside the computer or the NAS (Network Attached Storage) after your initial purchase.

Please continue when you are ready.



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Have you purchased an external or internal hard-drive in the past six years? Please count hard drives that were part of a Network Attached Storage (NAS) device but do not count hard drives that were pre-installed or part of a computer package that you bought.

Please select one answer.

☐ Yes, I have

☐ No, I have not

☐ Don't know/Not sure

→

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Considering any hard-drive(s) that you purchased during the past six years, please indicate the following:


Please select one answer.

☐ I made the decision

☐ I was involved but was not the primary decision maker

☐ I was not involved in the decision making process

☐ Don't know/ Not sure



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Please select the one statement that best applies for any hard-drive(s) that you purchased in the past six years.

I purchased an external or internal hard-drive...


Please select one answer.

☐ For business use only

☐ For personal, non-business use only

☐ For personal and business use

☐ Don't know/ Not sure



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Which of the following hard-drive brand(s) have you purchased in the past six years?

Please select all that apply.

☐ Seagate


☐ Western Digital (WD)

☐ HGST, or its predecessors Hitachi Global Storage Technologies or Hitachi

☐ Toshiba

☐ Other (please specify):

☐ Don't know/ Not sure



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What capacity external or internal hard-drive(s) did you purchase in the past six years?

Please select all that apply.

☐ 1 TB

☐ 2 TB

☐ 3 TB

☐ 4 TB

☐ 5 TB

☐ Other

☐ Don't know / Not sure

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questions | comments | need help

What year was your most recent purchase of an external or internal hard drive which was 1 to 5 TB capacity?

Please select one answer.

☐ 2017

☐ 2016

☐ 2015

☐ 2014

☐ 2013

☐ 2012

☐ 2011

☐ Don't remember exact year but was within past 6 years

☐ Other

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Your name and phone number and your responses to this survey will be kept completely confidential. We will not be calling to sell you anything; we will only call to verify your participation.

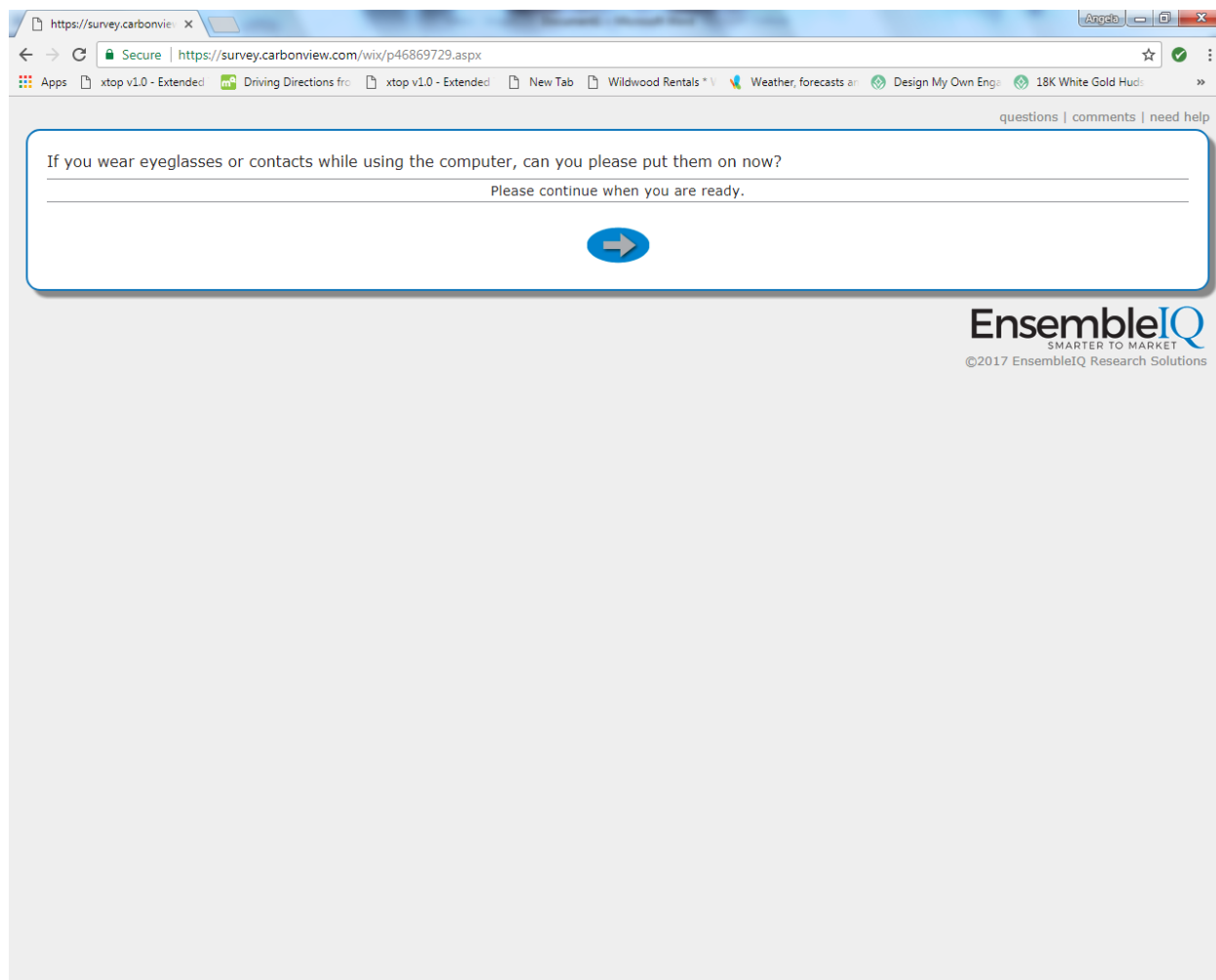
Please record your name and phone number below:

Name:

Phone Number:



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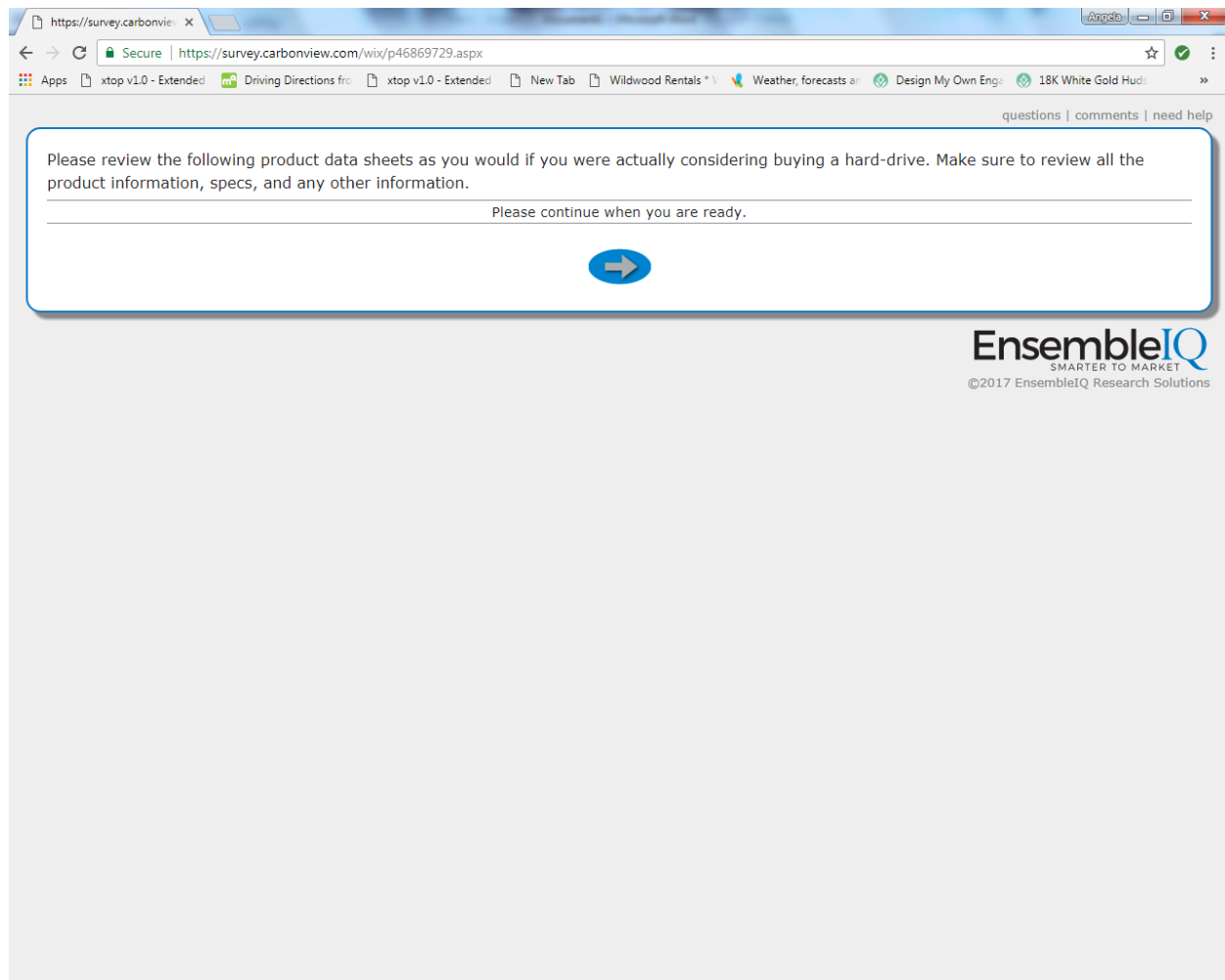
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questions | comments | need help

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Desktop HDD

Data Sheet

The Power of One

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- Increase your capacity and drive down costs with up to 1.33TB-per-disk hard drive technology
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- Seagate AcuTrac™ servo technology delivers dependable performance
- Free DiscWizard™ software enables high capacities on legacy PC BIOS systems
- Seagate Secure™ models provide hardware-based data security and deliver an Instant Secure Erase feature for safe, fast and easy drive retirement¹
- Seagate Secure models meet the NIST 800-88 media sanitization specification and also support the Trusted Computer Group (TCG) Opal standard¹



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- Entry-level direct-attached storage devices (DAS)

¹ Seagate Secure models are not available in all countries. May require TCG-compliant host or controller support.


https://survey.carbonview.com/wix/p46869729.aspx

Secure | https://survey.carbonview.com/wix/p46869729.aspx


Apps xtop v1.0 - Extended Driving Directions from xtop v1.0 - Extended New Tab Wildwood Rentals Weather, forecasts and Design My Own Engine 18K White Gold HUD

questions | comments | need help

Now, please review the information on this second product data sheet. You may need to scroll down to see the entire page. When you are done, click on the >> at the bottom of the page to continue.

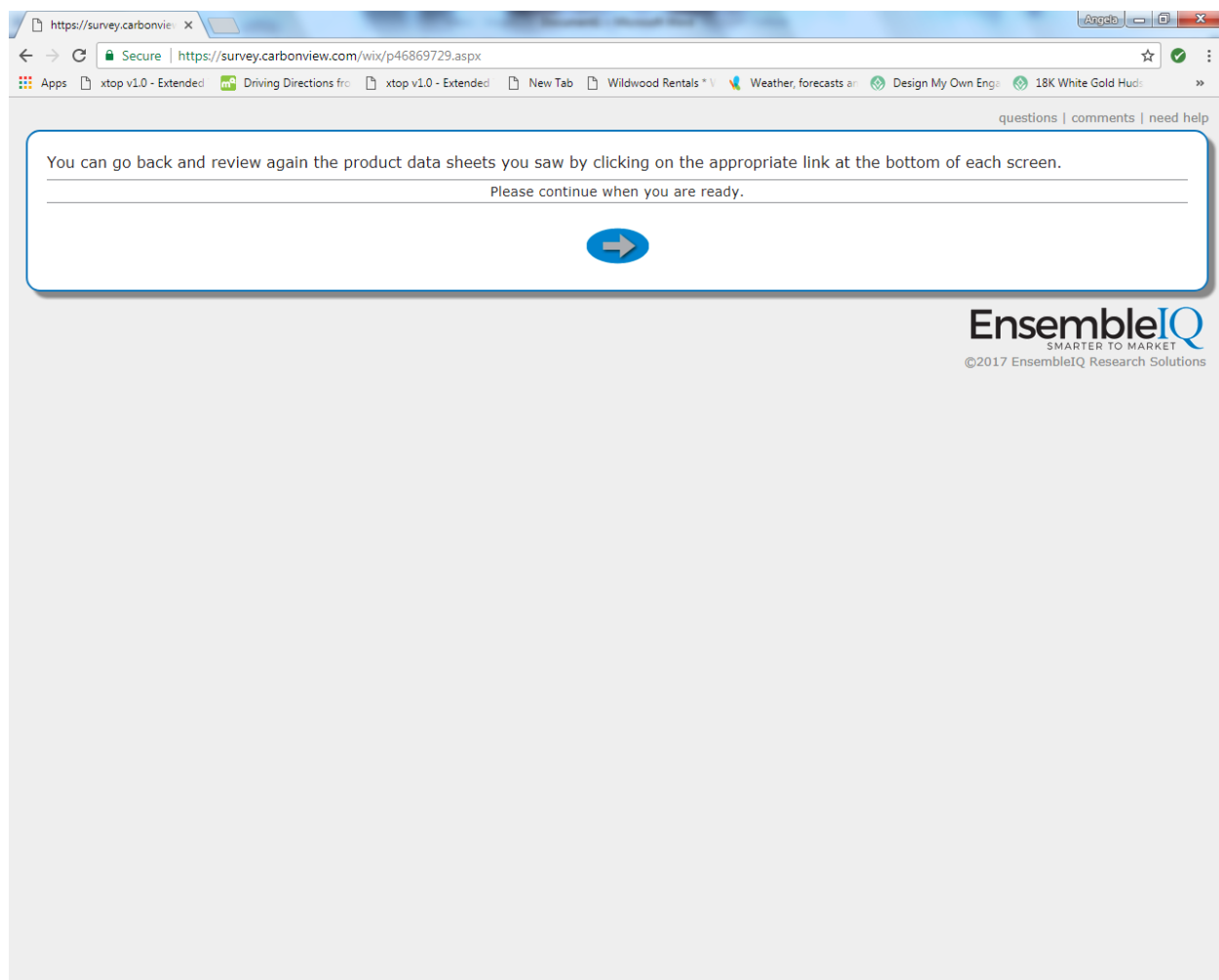


Desktop HDD



Specifications	3TB
Standard Model Numbers ¹	ST3000DM001
Seagate Secure™ Model Numbers	ST3000DM002
Interface	SATA 6Gb/s
Cache	64MB
Model Name	formerly Barracuda
Performance	
SATA Transfer Rates Supported (Gb/s)	6.0/3.0/1.5
Max Sustainable Transfer Rate	210MB/s
Configuration/Organization	
Heads/Disks	6/3
Bytes per Sector	512E
Voltage	
Voltage Tolerance, Inc. Noise (5V)	±5%
Voltage Tolerance, Inc. Noise (12V)	±10%
Reliability/Data Integrity	
Annualized Failure Rate (AFR)	<8%
Contact Start/Stop Cycles ²	—
Load/Unload Cycles ³	300,000
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E14
Workload Rate Limit (TB/year)	55
Power-On Hours	2,400
Warranty, Limited (years) ⁴	2
Power Management	
Startup Power (12V, A)	2.5
Average Operating Power	8W
Idle Average (W)	5.4W
Standby/Sleep Mode	0.75W/0.75W

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questions | comments | need help

Assuming you were considering buying this type of hard-drive and the product costs approximately \$79.00, how likely or unlikely would you be to buy the hard-drive shown on the product data sheets you just saw? - Would you say that you would Definitely not buy it, you would Probably not buy it, you May or May Not buy it, you would Probably buy it, or you would Definitely buy it?

If you would like to view the FIRST product data sheet again, please [click here](#)
If you would like to view the SECOND product data sheet again, please [click here](#)

Please select one answer.


☐ Definitely not buy it

☐ Probably not buy it

☐ May or may not buy it

☐ Probably buy it

☐ Definitely buy it



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Apps xtop v1.0 - Extended Driving Directions from xtop v1.0 - Extended New Tab Wildwood Rentals Weather, forecasts and Design My Own Engine 18K White Gold Hud


questions | comments | need help

Assuming you were considering buying this type of hard-drive and the product costs approximately \$79.00, how likely or unlikely would you be to buy the hard-drive shown on the product data sheets you just saw? - Would you say that you would Definitely buy it, you would Probably buy it, you May or May Not buy it, you would Probably Not buy it, or you would Definitely Not buy it?

If you would like to view the FIRST product data sheet again, please [click here](#)
If you would like to view the SECOND product data sheet again, please [click here](#)

Please select one answer.

☐ Definitely buy it
☐ Probably buy it
☐ May or may not buy it
☐ Probably not buy it
☐ Definitely not buy it




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What makes you say that you would **definitely buy it**?

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If you would like to view the SECOND product data sheet again, please [click here](#)

Please type your answer below. Please be specific and include details.



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Any other reason that you would **definitely buy it**?

If you would like to view the FIRST product data sheet again, please [click here](#)
If you would like to view the SECOND product data sheet again, please [click here](#)

Please type your answer below. Please be specific and include details.

➔

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Apps xtop v1.0 - Extended Driving Directions fr xtop v1.0 - Extended New Tab Wildwood Rentals * Weather, forecasts an Design My Own Eng 18K White Gold Hud

questions | comments | need help

In general, what have been the main uses of the hard-drive(s) you bought in the past six years?

Please type your answer below. Please be specific and include details.

➔

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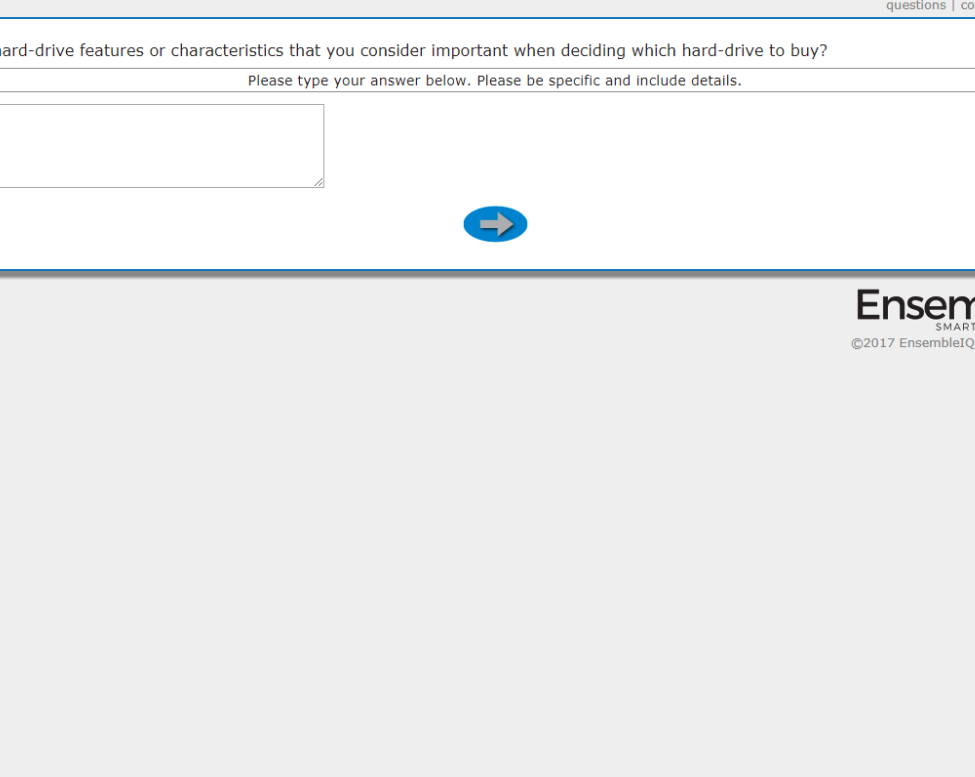
Any other hard-drive uses?

Please type your answer below. Please be specific and include details.

→


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[illegible]



Any other hard-drive features or characteristics that you consider important when deciding which hard-drive to buy?

Please type your answer below. Please be specific and include details.



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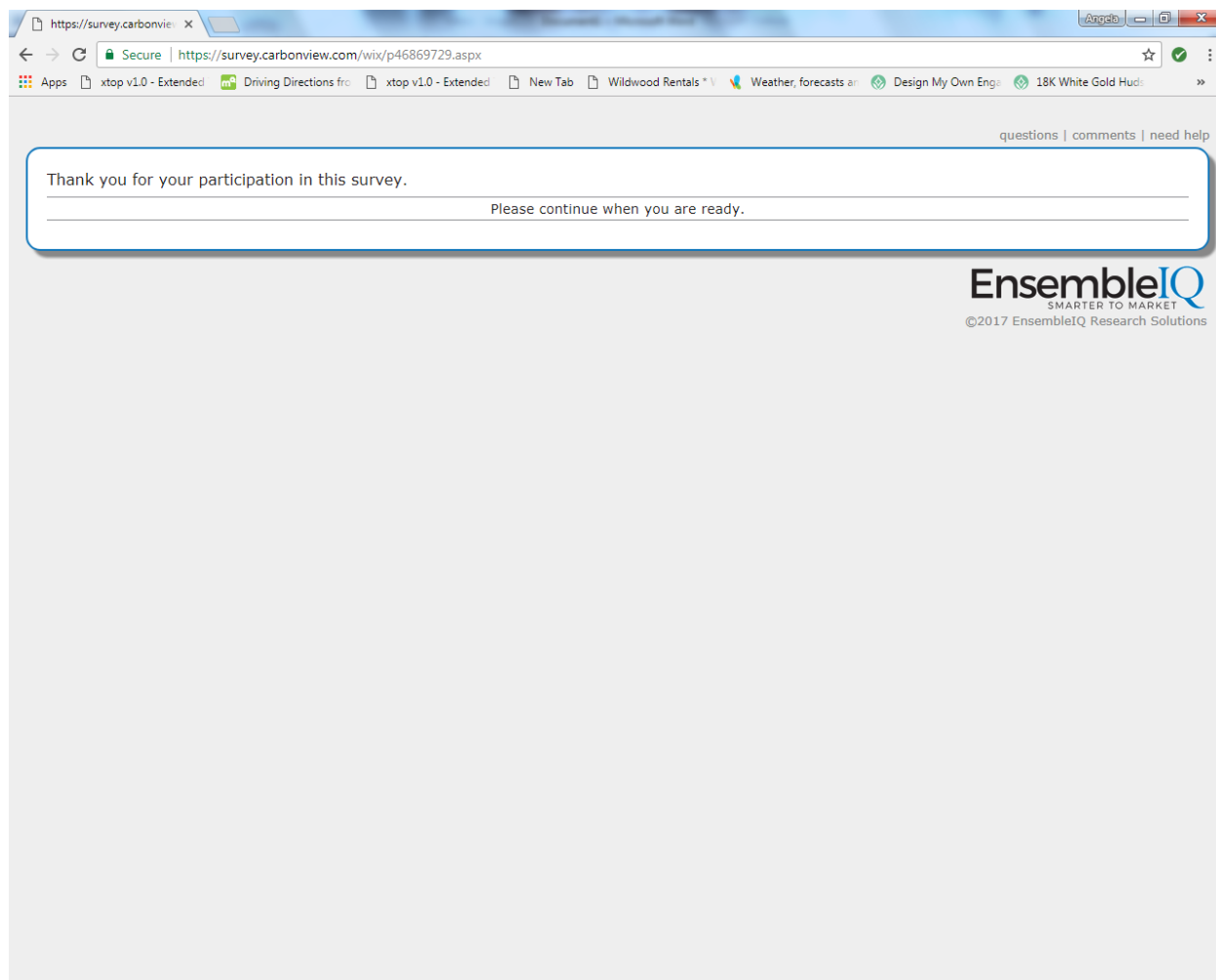


EXHIBIT F

28 December 2017

Page 1

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Page -----	Table -----	Title -----
1	1	Q.15/Q.20 - GENDER/AGE
14	2	Q.25 - STATE
18	3	Q.50 - HAVE YOU PURCHASED AN EXTERNAL OR INTERNAL HARD-DRIVE IN THE PAST SIX YEARS? PLEASE COUNT HARD DRIVES THAT WERE PART OF A NETWORK ATTACHED STORAGE (NAS) DEVICE BUT DO NOT COUNT HARD DRIVES THAT WERE PRE-INSTALLED OR PART OF A COMPUTER PACKAGE THAT YOU BOUGHT.
19	4	Q.55 - CONSIDERING ANY HARD-DRIVE(S) THAT YOU PURCHASED DURING THE PAST SIX YEARS, PLEASE INDICATE THE FOLLOWING:
20	5	Q.60 - PLEASE SELECT THE ONE STATEMENT THAT BEST APPLIES FOR ANY HARD-DRIVE(S) THAT YOU PURCHASED IN THE PAST SIX YEARS.
21	6	Q.65 - WHICH OF THE FOLLOWING HARD-DRIVE BRAND(S) HAVE YOU PURCHASED IN THE PAST SIX YEARS?
22	7	Q.70 - WHAT CAPACITY EXTERNAL OR INTERNAL HARD-DRIVE(S) DID YOU PURCHASE IN THE PAST SIX YEARS?
23	8	Q.75 - WHAT YEAR WAS YOUR MOST RECENT PURCHASE OF AN EXTERNAL OR INTERNAL HARD DRIVE WHICH WAS 1 TO 5 TB CAPACITY?
24	9	Q.250A/Q.250B - ASSUMING YOU WERE CONSIDERING BUYING THIS TYPE OF HARD-DRIVE AND THE PRODUCT COSTS APPROXIMATELY \$79.00, HOW LIKELY OR UNLIKELY WOULD YOU BE TO BUY THE HARD-DRIVE SHOWN ON THE PRODUCT DATA SHEETS YOU JUST SAW?
25	10	Q.260/Q.265-1 - WHAT MAKES YOU SAY THAT YOU WOULD DEFINITELY/PROBABLY BUY IT? ANY OTHER REASON WHY YOU WOULD DEFINITELY/PROBABLY BUY IT?
32	11	Q.260/Q.265-2 - WHAT MAKES YOU SAY THAT YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT? ANY OTHER REASON WHY YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?
37	12	Q.270/Q.275 - IN GENERAL, WHAT HAVE BEEN THE MAIN USES OF THE HARD-DRIVE(S) YOU BOUGHT IN THE PAST SIX YEARS? ANY OTHER HARD-DRIVE USES?
40	13	Q.280/Q.285 - IN GENERAL, WHAT FEATURES OR CHARACTERISTICS OF HARD-DRIVES DO YOU CONSIDER MOST IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY? ANY OTHER HARD-DRIVE FEATURES OR CHARACTERISTICS THAT YOU CONSIDER IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
TOTAL		
18 - 35 YEARS (NET)	70 32.1	61 28.8
18	2 0.9	0 0
19	1 0.5	0 0
20	2 0.9	2 0.9
21	3 1.4	2 0.9
22	0 0	4 1.9
23	1 0.5	0 0
24	3 1.4	2 0.9
25	2 0.9	8 3.8
26	3 1.4	3 1.4
27	6 2.8	6 2.8
28	4 1.8	5 2.4
29	3 1.4	3 1.4
30	8 3.7	7 3.3
31	3 1.4	3 1.4

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
32	9 4.1	3 1.4
33	4 1.8	1 0.5
34	5 2.3	6 2.8
35	11 5.0	6 2.8
36 - 50 YEARS (NET)	75 34.4	67 31.6
36	6 2.8	7 3.3
37	5 2.3	9 4.2
38	7 3.2	5 2.4
39	8 3.7	4 1.9
40	3 1.4	2 0.9
41	6 2.8	2 0.9
42	8 3.7	5 2.4
43	3 1.4	3 1.4
44	5 2.3	4 1.9
45	5 2.3	3 1.4

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
46	1 0.5	4 1.9
47	4 1.8	6 2.8
48	4 1.8	5 2.4
49	1 0.5	1 0.5
50	9 4.1	7 3.3
51 YEARS OR OLDER (NET)	73 33.5	84 39.6
51	2 0.9	6 2.8
52	3 1.4	4 1.9
53	5 2.3	6 2.8
54	4 1.8	4 1.9
55	2 0.9	1 0.5
56	7 3.2	4 1.9
57	2 0.9	3 1.4
58	4 1.8	5 2.4
59	2 0.9	5 2.4

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
60	7 3.2	3 1.4
61	5 2.3	3 1.4
62	3 1.4	5 2.4
63	5 2.3	2 0.9
64	0 0	3 1.4
65	3 1.4	4 1.9
66	2 0.9	2 0.9
67	1 0.5	2 0.9
68	3 1.4	3 1.4
69	3 1.4	3 1.4
70	2 0.9	2 0.9
71	0 0	3 1.4
72	0 0	3 1.4
73	0 0	2 0.9
74	1 0.5	2 0.9

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
75	2 0.9	1 0.5
76	2 0.9	1 0.5
77	1 0.5	1 0.5
79	1 0.5	0 0
80	1 0.5	0 0
85	0 0	1 0.5
MEAN AGE: TOTAL	44.58	46.07
STD. DEV.	14.32	15.12
STD. ERR.	0.970	1.038
MALES	108 49.5	105 49.5
18 - 35 YEARS (NET)	28 12.8	18 8.5
19	1 0.5	0 0
20	0 0	1 0.5
21	1 0.5	0 0
22	0 0	3 1.4
23	1 0.5	0 0
24	1 0.5	0 0

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
25	0 0	2 0.9
26	2 0.9	1 0.5
27	4 1.8	2 0.9
28	1 0.5	1 0.5
29	1 0.5	1 0.5
30	2 0.9	2 0.9
31	3 1.4	0 0
32	2 0.9	0 0
33	3 1.4	0 0
34	2 0.9	3 1.4
35	4 1.8	2 0.9
36 - 50 YEARS (NET)	30 13.8	36 17.0
36	3 1.4	4 1.9
37	2 0.9	3 1.4
38	1 0.5	4 1.9

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
39	5 2.3	2 0.9
40	1 0.5	1 0.5
41	2 0.9	1 0.5
42	3 1.4	2 0.9
43	1 0.5	3 1.4
44	2 0.9	1 0.5
45	1 0.5	2 0.9
46	1 0.5	2 0.9
47	2 0.9	3 1.4
48	2 0.9	4 1.9
50	4 1.8	4 1.9
51 YEARS OR OLDER (NET)	50 22.9	51 24.1
51	1 0.5	3 1.4
52	2 0.9	2 0.9
53	2 0.9	2 0.9

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
54	3 1.4	3 1.4
55	1 0.5	1 0.5
56	3 1.4	2 0.9
57	1 0.5	0 0
58	4 1.8	2 0.9
59	2 0.9	3 1.4
60	4 1.8	3 1.4
61	3 1.4	2 0.9
62	2 0.9	3 1.4
63	4 1.8	1 0.5
64	0 0	2 0.9
65	3 1.4	3 1.4
66	1 0.5	2 0.9
67	1 0.5	2 0.9
68	3 1.4	2 0.9

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
69	3 1.4	0 0
70	0 0	2 0.9
71	0 0	3 1.4
72	0 0	2 0.9
73	0 0	2 0.9
74	1 0.5	1 0.5
75	2 0.9	0 0
76	2 0.9	1 0.5
77	1 0.5	1 0.5
79	1 0.5	0 0
85	0 0	1 0.5
MEAN AGE: MALE	48.39	50.09
STD. DEV.	15.18	15.08
STD. ERR.	1.461	1.472
FEMALES	110 50.5	107 50.5
18 - 35 YEARS (NET)	42 19.3	43 20.3
18	2 0.9	0 0

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
20	2 0.9	1 0.5
21	2 0.9	2 0.9
22	0 0	1 0.5
24	2 0.9	2 0.9
25	2 0.9	6 2.8
26	1 0.5	2 0.9
27	2 0.9	4 1.9
28	3 1.4	4 1.9
29	2 0.9	2 0.9
30	6 2.8	5 2.4
31	0 0	3 1.4
32	7 3.2	3 1.4
33	1 0.5	1 0.5
34	3 1.4	3 1.4
35	7 3.2	4 1.9

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
36 - 50 YEARS (NET)	45 20.6	31 14.6
36	3 1.4	3 1.4
37	3 1.4	6 2.8
38	6 2.8	1 0.5
39	3 1.4	2 0.9
40	2 0.9	1 0.5
41	4 1.8	1 0.5
42	5 2.3	3 1.4
43	2 0.9	0 0
44	3 1.4	3 1.4
45	4 1.8	1 0.5
46	0 0	2 0.9
47	2 0.9	3 1.4
48	2 0.9	1 0.5
49	1 0.5	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
50	5 2.3	3 1.4
51 YEARS OR OLDER (NET)	23 10.6	33 15.6
51	1 0.5	3 1.4
52	1 0.5	2 0.9
53	3 1.4	4 1.9
54	1 0.5	1 0.5
55	1 0.5	0 0
56	4 1.8	2 0.9
57	1 0.5	3 1.4
58	0 0	3 1.4
59	0 0	2 0.9
60	3 1.4	0 0
61	2 0.9	1 0.5
62	1 0.5	2 0.9
63	1 0.5	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 1

Q.15/Q.20 - GENDER/AGE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
64	0 0	1 0.5
65	0 0	1 0.5
66	1 0.5	0 0
68	0 0	1 0.5
69	0 0	3 1.4
70	2 0.9	0 0
72	0 0	1 0.5
74	0 0	1 0.5
75	0 0	1 0.5
80	1 0.5	0 0
MEAN AGE: FEMALE	40.84	42.12
STD. DEV.	12.39	14.15
STD. ERR.	1.182	1.367

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 2

Q.25 - STATE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
NORTHEAST (NET)	42 19.3	50 23.6
CONNECTICUT	3 1.4	1 0.5
MAINE	1 0.5	3 1.4
MASSACHUSETTS	1 0.5	6 2.8
NEW HAMPSHIRE	2 0.9	3 1.4
RHODE ISLAND	1 0.5	0 0
NEW JERSEY	3 1.4	6 2.8
NEW YORK	19 8.7	20 9.4
PENNSYLVANIA	12 5.5	11 5.2
MIDWEST (NET)	56 25.7	36 17.0
ILLINOIS	12 5.5	4 1.9
INDIANA	6 2.8	2 0.9
MICHIGAN	9 4.1	9 4.2
OHIO	11 5.0	4 1.9
WISCONSIN	3 1.4	4 1.9

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 2

Q.25 - STATE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
IOWA	2 0.9	1 0.5
KANSAS	1 0.5	1 0.5
MINNESOTA	4 1.8	7 3.3
MISSOURI	7 3.2	3 1.4
NEBRASKA	1 0.5	0 0
SOUTH DAKOTA	0 0	1 0.5
SOUTH (NET)	84 38.5	85 40.1
DELAWARE	1 0.5	4 1.9
FLORIDA	19 8.7	20 9.4
GEORGIA	7 3.2	3 1.4
MARYLAND	5 2.3	4 1.9
NORTH CAROLINA	11 5.0	7 3.3
SOUTH CAROLINA	3 1.4	2 0.9
VIRGINIA	4 1.8	6 2.8
WEST VIRGINIA	0 0	5 2.4

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 2

Q.25 - STATE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
ALABAMA	4 1.8	5 2.4
KENTUCKY	4 1.8	2 0.9
MISSISSIPPI	1 0.5	0 0
TENNESSEE	1 0.5	4 1.9
ARKANSAS	3 1.4	2 0.9
LOUISIANA	5 2.3	1 0.5
OKLAHOMA	2 0.9	5 2.4
TEXAS	14 6.4	15 7.1
WEST (NET)	36 16.5	41 19.3
ARIZONA	4 1.8	7 3.3
COLORADO	3 1.4	0 0
NEVADA	4 1.8	1 0.5
UTAH	1 0.5	4 1.9
CALIFORNIA	20 9.2	19 9.0
HAWAII	0 0	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 2

Q.25 - STATE

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
OREGON	0 0	4 1.9
WASHINGTON	4 1.8	5 2.4

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 3

Q.50 - HAVE YOU PURCHASED AN EXTERNAL OR INTERNAL HARD-DRIVE IN THE PAST SIX YEARS?
PLEASE COUNT HARD DRIVES THAT WERE PART OF A NETWORK ATTACHED STORAGE (NAS) DEVICE BUT DO NOT
COUNT HARD DRIVES THAT WERE PRE-INSTALLED OR PART OF A COMPUTER PACKAGE THAT YOU BOUGHT.

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
YES, I HAVE	218 100.0	212 100.0
NO, I HAVE NOT	0 0	0 0
DON'T KNOW/NOT SURE	0 0	0 0

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 4

Q.55 - CONSIDERING ANY HARD-DRIVE(S) THAT YOU PURCHASED
DURING THE PAST SIX YEARS, PLEASE INDICATE THE FOLLOWING:

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
MADE/INVOLVED IN DECISION (NET)	218 100.0	212 100.0
I MADE THE DECISION	203 93.1	196 92.5
I WAS INVOLVED BUT WAS NOT THE PRIMARY DECISION MAKER	15 6.9	16 7.5
I WAS NOT INVOLVED IN THE DECISION MAKING PROCESS	0 0	0 0
DON'T KNOW/NOT SURE	0 0	0 0

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 5

Q.60 - PLEASE SELECT THE ONE STATEMENT THAT BEST APPLIES
FOR ANY HARD-DRIVE(S) THAT YOU PURCHASED IN THE PAST SIX YEARS.

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
FOR BUSINESS USE ONLY	0 0	0 0
FOR PERSONAL USE (NET)	218 100.0	212 100.0
FOR PERSONAL, NON-BUSINESS USE ONLY	148 67.9	142 67.0
FOR PERSONAL AND BUSINESS USE	70 32.1	70 33.0
DON'T KNOW/ NOT SURE	0 0	0 0

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 6

Q.65 - WHICH OF THE FOLLOWING HARD-DRIVE BRAND(S)
HAVE YOU PURCHASED IN THE PAST SIX YEARS?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
SEAGATE/WESTERN DIGITAL/TOSHIBA (NET)	218 100.0	212 100.0
SEAGATE	94 43.1	92 43.4
WESTERN DIGITAL (WD)	109 50.0	95 44.8
TOSHIBA	85 39.0	90 42.5
HGST, OR ITS PREDECESSORS HITACHI GLOBAL STORAGE TECHNOLOGIES OR HITACHI	13 6.0	8 3.8
OTHER	5 2.3	3 1.4
DON'T KNOW/NOT SURE	0 0	0 0

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 7

Q.70 - WHAT CAPACITY EXTERNAL OR INTERNAL HARD-DRIVE(S)
DID YOU PURCHASE IN THE PAST SIX YEARS?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
1/2/3/4/5 TB (NET)	218 100.0	212 100.0
1 TB	97 44.5	90 42.5
2 TB	75 34.4	72 34.0
3 TB	42 19.3	30 14.2
4 TB	49 22.5	34 16.0
5 TB	26 11.9	28 13.2
OTHER	8 3.7	5 2.4
DON'T KNOW/NOT SURE	0 0	0 0

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 8

Q.75 - WHAT YEAR WAS YOUR MOST RECENT PURCHASE OF
AN EXTERNAL OR INTERNAL HARD DRIVE WHICH WAS 1 TO 5 TB CAPACITY?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
WITHIN PAST 6 YEARS (NET)	218 100.0	212 100.0
2017	72 33.0	68 32.1
2016	67 30.7	56 26.4
2015	42 19.3	41 19.3
2014	18 8.3	13 6.1
2013	4 1.8	13 6.1
2012	5 2.3	8 3.8
2011	2 0.9	2 0.9
DON'T REMEMBER EXACT YEAR BUT WAS WITHIN PAST 6 YEARS	8 3.7	11 5.2
OTHER	0 0	0 0

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 9

Q.250A/Q.250B - ASSUMING YOU WERE CONSIDERING BUYING THIS TYPE OF HARD-DRIVE AND THE PRODUCT COSTS APPROXIMATELY \$79.00,
HOW LIKELY OR UNLIKELY WOULD YOU BE TO BUY THE HARD-DRIVE SHOWN ON THE PRODUCT DATA SHEETS YOU JUST SAW?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
DEFINITELY BUY IT	50 22.9	51 24.1
PROBABLY BUY IT	101 46.3	83 39.2
MAY OR MAY NOT BUY IT	50 22.9	61 28.8
PROBABLY NOT BUY IT	12 5.5	8 3.8
DEFINITELY NOT BUY IT	5 2.3	9 4.2

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 10

Q.260/Q.265-1 - WHAT MAKES YOU SAY THAT YOU WOULD DEFINITELY/PROBABLY BUY IT?
ANY OTHER REASON WHY YOU WOULD DEFINITELY/PROBABLY BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
HAVE POSITIVE PURCHASE INTEREST	151 69.3	134 63.2
POSITIVE (GRAND NET)	145 66.5	127 59.9
EASE/CONVENIENCE (NET)	5 2.3	4 1.9
EASY/SIMPLE/EASY TO USE	2 0.9	3 1.4
OTHER MISCELLANEOUS EASE/CONVENIENCE MENTIONS	3 1.4	2 0.9
BRAND RELATED (NET)	38 17.4	37 17.5
GOOD BRAND/MADE BY SEAGATE/SEAGATE IS A GOOD BRAND (UNSPEC)	14 6.4	15 7.1
USE/HAVE USED THEIR PRODUCTS BEFORE (AND LIKED THEM)	3 1.4	4 1.9
RELIABLE/DEPENDABLE/REPUTABLE BRAND/ TRUST SEAGATE	15 6.9	15 7.1
FAMILIAR/WELL KNOWN/NAME BRAND	4 1.8	3 1.4
LONG HISTORY/30 YEARS OF HISTORY	3 1.4	4 1.9
OTHER BRAND RELATED MENTIONS	2 0.9	2 0.9
SPEED RELATED (NET)	10 4.6	10 4.7
FAST/SPEED/HIGH SPEED	7 3.2	8 3.8
FAST/FASTER TRANSFER SPEEDS	2 0.9	2 0.9

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 10

Q.260/Q.265-1 - WHAT MAKES YOU SAY THAT YOU WOULD DEFINITELY/PROBABLY BUY IT?
ANY OTHER REASON WHY YOU WOULD DEFINITELY/PROBABLY BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
OTHER SPEED RELATED MENTIONS	2 0.9	2 0.9
CAPACITY (NET)	48 22.0	40 18.9
GOOD MEMORY/STORAGE CAPACITY (UNSPEC)	20 9.2	18 8.5
LARGE STORAGE CAPACITY/HAS A LOT OF SPACE/CAN SAVE/BACKUP A LOT OF FILES	17 7.8	13 6.1
3TB SIZE/STORAGE CAPACITY	5 2.3	4 1.9
5TB SIZE/STORAGE CAPACITY	3 1.4	5 2.4
OTHER CAPACITY MENTIONS	3 1.4	1 0.5
APPEARANCE (NET)	2 0.9	1 0.5
THE APPEARANCE/STYLE/DESIGN/LOOKS ATTRACTIVE (UNSPEC)	2 0.9	0 0
OTHER APPEARANCE MENTIONS	0 0	1 0.5
RUGGED/DURABLE/RELIABLE (NET)	11 5.0	3 1.4
FAILURE RATE (SUBNET)	1 0.5	0 0
<1% FAILURE RATE	1 0.5	0 0
MISCELLANEOUS RUGGED/DURABLE/RELIABLE		
RELIABLE/DEPENDABLE	6 2.8	2 0.9

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 10

Q.260/Q.265-1 - WHAT MAKES YOU SAY THAT YOU WOULD DEFINITELY/PROBABLY BUY IT?
ANY OTHER REASON WHY YOU WOULD DEFINITELY/PROBABLY BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
DURABLE	3 1.4	0 0
LONG LASTING	1 0.5	1 0.5
ABLE TO WITHSTAND EXTREME TEMPERATURES	1 0.5	0 0
GENERAL FUNCTIONALITY (NET)	27 12.4	37 17.5
GOOD PERFORMANCE/WOULD WORK/DO THE JOB	3 1.4	9 4.2
LIKE THE SPECS/FEATURES (UNSPEC)	16 7.3	24 11.3
OTHER GENERAL FUNCTIONALITY MENTIONS	9 4.1	8 3.8
GENERAL QUALITY (NET)	9 4.1	14 6.6
GOOD/HIGH QUALITY	6 2.8	13 6.1
OTHER GENERAL QUALITY MENTIONS	3 1.4	2 0.9
USEFUL/NEEDED PRODUCT (NET)	36 16.5	37 17.5
USEFUL/HELPFUL (UNSPEC)	8 3.7	2 0.9
SOMETHING I NEED/THE KIND OF PRODUCT I'VE BEEN LOOKING FOR	9 4.1	13 6.1
MEETS MY NEEDS/GIVES ME EVERYTHING I NEED	19 8.7	21 9.9
OTHER USEFUL/NEEDED PRODUCT MENTIONS	0 0	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 10

Q.260/Q.265-1 - WHAT MAKES YOU SAY THAT YOU WOULD DEFINITELY/PROBABLY BUY IT?
ANY OTHER REASON WHY YOU WOULD DEFINITELY/PROBABLY BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
USAGE (NET)	5 2.3	4 1.9
GOOD FOR STORING PHOTOS	1 0.5	2 0.9
GOOD FOR A BACKUP/TO STORE/BACKUP DATA/FILES	2 0.9	1 0.5
OTHER USAGE MENTIONS	2 0.9	2 0.9
COST/ECONOMY (NET)	69 31.7	57 26.9
GOOD/REASONABLE PRICE/COST/IT'S AFFORDABLE	42 19.3	35 16.5
GOOD PRICE FOR SIZE/FOR STORAGE CAPACITY	17 7.8	6 2.8
GOOD VALUE/DEAL	11 5.0	8 3.8
OTHER COST/ECONOMY MENTIONS	3 1.4	9 4.2
MISCELLANEOUS POSITIVE		
LOOKS/SOUNDS GOOD/INTERESTING/A GOOD PRODUCT/HARD DRIVE/I'D LIKE IT (UNSPEC)	9 4.1	6 2.8
LIKE THE SIZE/GOOD SIZE (UNSPEC)	3 1.4	0 0
COMPATIBLE WITH MY COMPUTER/PRESENT OS	4 1.8	2 0.9
NEW/DIFFERENT/UNIQUE	3 1.4	0 0
MODERN/TECHNOLOGICALLY ADVANCED/ INNOVATIVE/CUTTING EDGE PRODUCT	3 1.4	5 2.4

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 10

Q.260/Q.265-1 - WHAT MAKES YOU SAY THAT YOU WOULD DEFINITELY/PROBABLY BUY IT?
ANY OTHER REASON WHY YOU WOULD DEFINITELY/PROBABLY BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
WARRANTY/GOOD WARRANTY/WARRANTIES/1 YEAR/2 YEAR/EXTENDED WARRANTY	4 1.8	1 0.5
SAFE/SECURE	9 4.1	1 0.5
STRONG/POWERFUL	4 1.8	1 0.5
LIKE DESCRIPTION/INFORMATION GIVEN (ALL MENTIONS)	1 0.5	5 2.4
OTHER MISCELLANEOUS POSITIVE MENTIONS	11 5.0	6 2.8
NEGATIVE (GRAND NET)	6 2.8	4 1.9
CAPACITY (NET)	2 0.9	0 0
SMALL STORAGE CAPACITY/WANT A LARGER CAPACITY DRIVE (UNSPEC)	1 0.5	0 0
LARGE STORAGE CAPACITY/MORE STORAGE THAN I WANT/NEED	1 0.5	0 0
LACK OF RELIABILITY (NET)	0 0	1 0.5
FAILURE RATE (SUBNET)	0 0	1 0.5
DISLIKE <8% FAILURE RATE	0 0	1 0.5
LACK OF NEED (NET)	2 0.9	2 0.9
PREFER/USE OTHERS (SUBNET)	1 0.5	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Q.260/Q.265-1 - WHAT MAKES YOU SAY THAT YOU WOULD DEFINITELY/PROBABLY BUY IT?
ANY OTHER REASON WHY YOU WOULD DEFINITELY/PROBABLY BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
ALREADY HAVE ONE/SATISFIED WITH WHAT I CURRENTLY HAVE/USE (UNSPEC)	0 0	1 0.5
OTHER PREFER/USE OTHERS MENTIONS	1 0.5	0 0
MISCELLANEOUS LACK OF NEED		
DON'T NEED IT/NOT USEFUL FOR ME (UNSPEC)	1 0.5	1 0.5
MISCELLANEOUS NEGATIVE		
ALL NEGATIVE PRICE MENTIONS: TOO EXPENSIVE, COSTS MORE THAN OTHERS, CAN'T AFFORD IT	1 0.5	2 0.9
OTHER MISCELLANEOUS NEGATIVE MENTIONS	1 0.5	0 0
NEUTRAL (GRAND NET)	18 8.3	19 9.0
COST CONCERNS (NET)	7 3.2	8 3.8
DEPENDS ON PRICE/NEED TO KNOW THE PRICE (UNSPEC)	5 2.3	4 1.9
DEPENDS ON PRICE COMPARISON TO OTHERS	2 0.9	2 0.9
OTHER COST CONCERNS MENTIONS	0 0	2 0.9
NEED MORE INFORMATION (NET)	4 1.8	5 2.4
NEED TO DO RESEARCH/READ REVIEWS/GET MORE INFORMATION	1 0.5	3 1.4
NEED TO COMPARE WITH OTHERS/SEE WHAT ELSE IS AVAILABLE	3 1.4	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 10

Q.260/Q.265-1 - WHAT MAKES YOU SAY THAT YOU WOULD DEFINITELY/PROBABLY BUY IT?
ANY OTHER REASON WHY YOU WOULD DEFINITELY/PROBABLY BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
NOT FAMILIAR WITH THE BRAND/NEED TO KNOW MORE ABOUT THE BRAND/MANUFACTURER	0 0	2 0.9
SPEED RELATED (NET)	1 0.5	0 0
OTHER SPEED RELATED MENTIONS	1 0.5	0 0
MISCELLANEOUS NEUTRAL		
DEPENDS ON NEED: IF I NEEDED (ANOTHER) HARD DRIVE, IF I NEEDED THAT MUCH STORAGE SPACE	8 3.7	4 1.9
HAVEN'T DECIDED/NOT SURE ABOUT IT YET	0 0	1 0.5
OTHER MISCELLANEOUS NEUTRAL MENTIONS	0 0	3 1.4
HAVE NEUTRAL/NEGATIVE PURCHASE INTEREST	67 30.7	78 36.8

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 11

Q.260/Q.265-2 - WHAT MAKES YOU SAY THAT YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?
ANY OTHER REASON WHY YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
NEUTRAL/NEGATIVE PURCHASE INTEREST	67 30.7	78 36.8
POSITIVE (GRAND NET)	15 6.9	17 8.0
BRAND RELATED (NET)	4 1.8	2 0.9
GOOD BRAND/MADE BY SEAGATE/SEAGATE IS A GOOD BRAND (UNSPEC)	2 0.9	1 0.5
RELIABLE/DEPENDABLE/REPUTABLE BRAND/ TRUST SEAGATE	1 0.5	1 0.5
OTHER BRAND RELATED MENTIONS	1 0.5	0 0
SPEED RELATED (NET)	0 0	1 0.5
FAST/SPEED/HIGH SPEED	0 0	1 0.5
CAPACITY (NET)	0 0	4 1.9
GOOD MEMORY/STORAGE CAPACITY (UNSPEC)	0 0	3 1.4
LARGE STORAGE CAPACITY/HAS A LOT OF SPACE/CAN SAVE/BACKUP A LOT OF FILES	0 0	1 0.5
APPEARANCE (NET)	2 0.9	0 0
THE APPEARANCE/STYLE/DESIGN/LOOKS ATTRACTIVE (UNSPEC)	2 0.9	0 0
GENERAL QUALITY (NET)	0 0	1 0.5
GOOD/HIGH QUALITY	0 0	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 11

Q.260/Q.265-2 - WHAT MAKES YOU SAY THAT YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?
ANY OTHER REASON WHY YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
USEFUL/NEEDED PRODUCT (NET)	1 0.5	0 0
MEETS MY NEEDS/GIVES ME EVERYTHING I NEED	1 0.5	0 0
USAGE (NET)	2 0.9	1 0.5
GOOD FOR A BACKUP/TO STORE/BACKUP DATA/FILES	1 0.5	0 0
OTHER USAGE MENTIONS	1 0.5	1 0.5
COST/ECONOMY (NET)	8 3.7	5 2.4
GOOD/REASONABLE PRICE/COST/IT'S AFFORDABLE	5 2.3	5 2.4
GOOD PRICE FOR SIZE/FOR STORAGE CAPACITY	2 0.9	0 0
GOOD VALUE/DEAL	1 0.5	0 0
OTHER COST/ECONOMY MENTIONS	1 0.5	0 0
MISCELLANEOUS POSITIVE		
LOOKS/SOUNDS GOOD/INTERESTING/A GOOD PRODUCT/HARD DRIVE/I'D LIKE IT (UNSPEC)	1 0.5	3 1.4
WARRANTY/GOOD WARRANTY/WARRANTIES/1 YEAR/2 YEAR/EXTENDED WARRANTY	0 0	2 0.9
SAFE/SECURE	1 0.5	0 0
LIKE DESCRIPTION/INFORMATION GIVEN (ALL MENTIONS)	0 0	2 0.9

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 11

Q.260/Q.265-2 - WHAT MAKES YOU SAY THAT YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?
ANY OTHER REASON WHY YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
Negative (Grand Net)	37 17.0	35 16.5
Capacity (Net)	4 1.8	9 4.2
Small Storage Capacity/Want a Larger Capacity Drive (Unspec)	2 0.9	2 0.9
Large Storage Capacity/More Storage Than I Want/Need	0 0	7 3.3
Other Capacity Mentions	2 0.9	0 0
Lack of Reliability (Net)	1 0.5	1 0.5
Failure Rate (Subnet)	0 0	1 0.5
Dislike <8% Failure Rate	0 0	1 0.5
Miscellaneous Lack of Reliability		
Other Miscellaneous Lack of Reliability Mentions	1 0.5	0 0
Lack of Need (Net)	22 10.1	21 9.9
Prefer/Use Others (Subnet)	14 6.4	9 4.2
Already Have One/Satisfied with What I Currently Have/Use (Unspec)	3 1.4	5 2.4
Prefer/Use Western Digital	6 2.8	2 0.9
Prefer SSD Drives	4 1.8	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 11

Q.260/Q.265-2 - WHAT MAKES YOU SAY THAT YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?
ANY OTHER REASON WHY YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
OTHER PREFER/USE OTHERS MENTIONS	1 0.5	1 0.5
MISCELLANEOUS LACK OF NEED		
DON'T NEED IT/NOT USEFUL FOR ME (UNSPEC)	5 2.3	6 2.8
DON'T HAVE/USE A DESKTOP/ONLY USE A LAPTOP/TABLET	1 0.5	5 2.4
OTHER LACK OF NEED MENTIONS	5 2.3	1 0.5
MISCELLANEOUS NEGATIVE		
ALL NEGATIVE PRICE MENTIONS: TOO EXPENSIVE, COSTS MORE THAN OTHERS, CAN'T AFFORD IT	8 3.7	5 2.4
DISLIKE THE BRAND/SEAGATE (ALL MENTIONS)	7 3.2	3 1.4
OTHER MISCELLANEOUS NEGATIVE MENTIONS	5 2.3	2 0.9
NEUTRAL (GRAND NET)	32 14.7	43 20.3
COST CONCERNS (NET)	6 2.8	17 8.0
DEPENDS ON PRICE/NEED TO KNOW THE PRICE (UNSPEC)	2 0.9	7 3.3
DEPENDS ON PRICE COMPARISON TO OTHERS	3 1.4	7 3.3
OTHER COST CONCERNS MENTIONS	1 0.5	4 1.9
NEED MORE INFORMATION (NET)	21 9.6	11 5.2

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 11

Q.260/Q.265-2 - WHAT MAKES YOU SAY THAT YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?
ANY OTHER REASON WHY YOU MAY OR MAY NOT BUY IT/PROBABLY NOT BUY IT, OR DEFINITELY NOT BUY IT?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
NEED TO DO RESEARCH/READ REVIEWS/GET MORE INFORMATION	8 3.7	6 2.8
NEED TO COMPARE WITH OTHERS/SEE WHAT ELSE IS AVAILABLE	8 3.7	2 0.9
NOT FAMILIAR WITH THE BRAND/NEED TO KNOW MORE ABOUT THE BRAND/MANUFACTURER	2 0.9	0 0
OTHER NEED MORE INFORMATION MENTIONS	4 1.8	4 1.9
SPEED RELATED (NET)	1 0.5	0 0
OTHER SPEED RELATED MENTIONS	1 0.5	0 0
MISCELLANEOUS NEUTRAL		
DEPENDS ON NEED: IF I NEEDED (ANOTHER) HARD DRIVE, IF I NEEDED THAT MUCH STORAGE SPACE	8 3.7	13 6.1
HAVEN'T DECIDED/NOT SURE ABOUT IT YET	1 0.5	2 0.9
OTHER MISCELLANEOUS NEUTRAL MENTIONS	3 1.4	11 5.2
DON'T KNOW/NOTHING/NO ANSWER	0 0	2 0.9
HAVE POSITIVE PURCHASE INTEREST	151 69.3	134 63.2

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 12

Q.270/Q.275 - IN GENERAL, WHAT HAVE BEEN THE MAIN USES OF THE HARD-DRIVE(S)
YOU BOUGHT IN THE PAST SIX YEARS? ANY OTHER HARD-DRIVE USES?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
SPECIFIC FILE TYPES (NET)	129 59.2	135 63.7
MEDIA FILES (SUBNET)	97 44.5	101 47.6
PHOTOS/IMAGE FILES (SUB-SUBNET)	64 29.4	76 35.8
STORING/BACKING UP PHOTOS/IMAGES	64 29.4	76 35.8
OTHER PHOTOS/IMAGE FILES MENTIONS	0 0	1 0.5
VIDEO FILES (SUB-SUBNET)	43 19.7	41 19.3
STORING/BACKING UP VIDEO/MOVIES	42 19.3	40 18.9
OTHER VIDEO FILES MENTIONS	3 1.4	1 0.5
MUSIC FILES (SUB-SUBNET)	33 15.1	22 10.4
MUSIC/AUDIO FILES	33 15.1	21 9.9
OTHER MUSIC FILES MENTIONS	0 0	1 0.5
MISCELLANEOUS MEDIA FILES		
FOR GAMING/STORING GAMES/EXTERNAL HARD DRIVE FOR GAME CONSOLE	15 6.9	14 6.6
OTHER MISCELLANEOUS MEDIA FILES	3 1.4	3 1.4

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 12

Q.270/Q.275 - IN GENERAL, WHAT HAVE BEEN THE MAIN USES OF THE HARD-DRIVE(S)
YOU BOUGHT IN THE PAST SIX YEARS? ANY OTHER HARD-DRIVE USES?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
MISCELLANEOUS SPECIFIC FILE TYPES		
STORING/BACKING UP DOCUMENTS	22 10.1	27 12.7
FOR SCHOOLWORK	3 1.4	7 3.3
FOR BUSINESS PURPOSES	13 6.0	23 10.8
FOR PERSONAL USE	19 8.7	33 15.6
LARGE FILES	5 2.3	2 0.9
IMPORTANT DOCUMENTS	9 4.1	9 4.2
OTHER MISCELLANEOUS SPECIFIC FILE TYPES MENTIONS	10 4.6	14 6.6
GENERAL STORAGE/BACK UP (NET)	132 60.6	119 56.1
FOR BACKING UP/BACK UP PURPOSES/AS A BACKUP DRIVE/TO BACK UP (ENTIRE) COMPUTER/ LAPTOP	56 25.7	53 25.0
DATA STORAGE/STORING (OLD) FILES	42 19.3	43 20.3
FOR EXTRA SPACE/MORE STORAGE CAPACITY	26 11.9	21 9.9
CLEARING OUT HARD DRIVE SPACE TO IMPROVE PERFORMANCE/ALLOW FOR MORE SPEED	7 3.2	6 2.8
TO FREE UP SPACE ON MY COMPUTER/LAPTOP	3 1.4	3 1.4

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 12

Q.270/Q.275 - IN GENERAL, WHAT HAVE BEEN THE MAIN USES OF THE HARD-DRIVE(S)
YOU BOUGHT IN THE PAST SIX YEARS? ANY OTHER HARD-DRIVE USES?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
FOR SECURE STORAGE/BACK UP IN CASE HARD DRIVE CRASHES	8 3.7	9 4.2
AS EXTERNAL DRIVE/STORAGE	9 4.1	5 2.4
OTHER GENERAL STORAGE/BACK UP MENTIONS	8 3.7	5 2.4
MISCELLANEOUS		
TRANSFER FILES/TRANSFER FROM DEVICE(S) TO COMPUTER/FROM ONE COMPUTER TO ANOTHER	6 2.8	8 3.8
TO REPLACE OLD HARD DRIVE/MY HARD DRIVE DIED	2 0.9	2 0.9
OTHER MISCELLANEOUS MENTIONS	12 5.5	9 4.2
NOTHING	1 0.5	1 0.5
DON'T KNOW	2 0.9	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 13

Q.280/Q.285 - IN GENERAL, WHAT FEATURES OR CHARACTERISTICS OF HARD-DRIVES
DO YOU CONSIDER MOST IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?
ANY OTHER HARD-DRIVE FEATURES OR CHARACTERISTICS THAT YOU CONSIDER
IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
GENERAL BACKUP (NET)	4 1.8	8 3.8
ABILITY TO BACKUP/SAVE/STORE DATA/FILES	1 0.5	6 2.8
OTHER GENERAL BACK UP MENTIONS	3 1.4	3 1.4
SPEED RELATED (NET)	62 28.4	53 25.0
SPEED/THAT IT'S FAST (UNSPEC)	41 18.8	38 17.9
TRANSFER SPEED	7 3.2	7 3.3
DISC ROTATIONAL SPEED	4 1.8	1 0.5
ACCESS SPEED	3 1.4	1 0.5
READ/WRITE RATES	3 1.4	4 1.9
DOWNLOAD SPEED	3 1.4	1 0.5
OTHER SPEED RELATED MENTIONS	2 0.9	3 1.4
EASE/CONVENIENCE (NET)	24 11.0	25 11.8
EASE OF USE/THAT IT'S EASY/SIMPLE TO USE	15 6.9	19 9.0
EASY TO INSTALL	5 2.3	6 2.8

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 13

Q.280/Q.285 - IN GENERAL, WHAT FEATURES OR CHARACTERISTICS OF HARD-DRIVES
DO YOU CONSIDER MOST IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?
ANY OTHER HARD-DRIVE FEATURES OR CHARACTERISTICS THAT YOU CONSIDER
IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
OTHER EASE/CONVENIENCE MENTIONS	6 2.8	3 1.4
CONNECTIONS (NET)	8 3.7	8 3.8
CONNECTIVITY/CONNECTION TYPE (UNSPEC)	3 1.4	3 1.4
USB CONNECTION (UNSPEC)	2 0.9	2 0.9
WI-FI/WIRELESS CONNECTIVITY	1 0.5	1 0.5
OTHER CONNECTIONS MENTIONS	2 0.9	3 1.4
COMPATIBILITY (NET)	21 9.6	10 4.7
COMPATIBILITY/COMPATIBLE WITH MY COMPUTER/ OS/DEVICES (UNSPEC)	17 7.8	8 3.8
OTHER COMPATIBILITY MENTIONS	5 2.3	2 0.9
RUGGEDNESS/DURABILITY/DEPENDABILITY (NET)	52 23.9	58 27.4
FAILURE RATE (SUBNET)	7 3.2	4 1.9
FAILURE RATE	4 1.8	3 1.4
LOW RISK OF FAILURE	1 0.5	0 0
NOT FAILING/KNOWING IT WON'T CRASH	2 0.9	1 0.5

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 13

Q.280/Q.285 - IN GENERAL, WHAT FEATURES OR CHARACTERISTICS OF HARD-DRIVES
DO YOU CONSIDER MOST IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?
ANY OTHER HARD-DRIVE FEATURES OR CHARACTERISTICS THAT YOU CONSIDER
IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
MISCELLANEOUS RUGGEDNESS/DURABILITY/DEPENDABILITY		
RELIABILITY/DEPENDABILITY	33 15.1	42 19.8
DURABILITY/STURDINESS/WON'T BREAK	4 1.8	12 5.7
LONGEVITY/LASTS/HOLDS UP A LONG TIME	11 5.0	6 2.8
STABILITY	0 0	3 1.4
GENERAL QUALITY (NET)	5 2.3	13 6.1
QUALITY	5 2.3	13 6.1
REVIEWS/RECOMMENDATIONS (NET)	8 3.7	9 4.2
REVIEWS/CUSTOMER REVIEWS	5 2.3	8 3.8
OTHER REVIEWS/RECOMMENDATIONS MENTIONS	3 1.4	1 0.5
APPEARANCE (NET)	3 1.4	1 0.5
OTHER APPEARANCE MENTIONS	3 1.4	1 0.5
PHYSICAL ATTRIBUTES (NET)	15 6.9	16 7.5
SIZE/SHAPE (SUBNET)	9 4.1	9 4.2

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 13

Q.280/Q.285 - IN GENERAL, WHAT FEATURES OR CHARACTERISTICS OF HARD-DRIVES
DO YOU CONSIDER MOST IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?
ANY OTHER HARD-DRIVE FEATURES OR CHARACTERISTICS THAT YOU CONSIDER
IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
PHYSICAL SIZE	5 2.3	3 1.4
SMALL/COMPACT	3 1.4	5 2.4
OTHER SIZE/SHAPE MENTIONS	1 0.5	1 0.5
MISCELLANEOUS PHYSICAL ATTRIBUTES		
PORTABILITY	6 2.8	9 4.2
OTHER MISCELLANEOUS PHYSICAL ATTRIBUTES MENTIONS	0 0	1 0.5
GENERAL PERFORMANCE/FUNCTIONALITY (NET)	21 9.6	14 6.6
HARD DRIVE TYPE	5 2.3	1 0.5
TEMPERATURE RANGE	2 0.9	4 1.9
SPECIFICATIONS	6 2.8	4 1.9
POWER CONSUMPTION	1 0.5	2 0.9
OTHER GENERAL PERFORMANCE/FUNCTIONALITY MENTIONS	9 4.1	5 2.4
BRAND RELATED (NET)	45 20.6	31 14.6
BRAND/MANUFACTURER (UNSPEC)	29 13.3	19 9.0

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 13

Q.280/Q.285 - IN GENERAL, WHAT FEATURES OR CHARACTERISTICS OF HARD-DRIVES
DO YOU CONSIDER MOST IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?
ANY OTHER HARD-DRIVE FEATURES OR CHARACTERISTICS THAT YOU CONSIDER
IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
BRAND REPUTATION/FROM A REPUTABLE/ RELIABLE/TRUSTWORTHY BRAND	10 4.6	8 3.8
FAMILIAR/WELL KNOWN/NAME BRAND	4 1.8	2 0.9
OTHER BRAND RELATED MENTIONS	5 2.3	3 1.4
SERVICE/REPAIR (NET)	5 2.3	6 2.8
WARRANTY/REPLACEMENT/RETURN POLICY	4 1.8	6 2.8
OTHER SERVICE/REPAIR MENTIONS	1 0.5	0 0
PRICE (NET)	60 27.5	75 35.4
PRICE/COST/AFFORDABILITY/GOOD PRICE (UNSPEC)	50 22.9	69 32.5
VALUE/PRICE TO SIZE RATIO	10 4.6	6 2.8
MISCELLANEOUS		
SIZE/HOW BIG IT IS (UNSPEC)	32 14.7	34 16.0
CAPACITY/AMOUNT OF MEMORY/STORAGE SPACE	130 59.6	123 58.0
SAFETY/SECURITY	12 5.5	4 1.9
SOFTWARE/DRIVERS	4 1.8	3 1.4
PERFORMANCE	6 2.8	8 3.8

TARGET RESEARCH GROUP INC.
COMPUTER HARDWARE SURVEY (#103-17128)

Table 13

Q.280/Q.285 - IN GENERAL, WHAT FEATURES OR CHARACTERISTICS OF HARD-DRIVES
DO YOU CONSIDER MOST IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?
ANY OTHER HARD-DRIVE FEATURES OR CHARACTERISTICS THAT YOU CONSIDER
IMPORTANT WHEN DECIDING WHICH HARD-DRIVE TO BUY?

	CELL1 AFR <1% -----	CELL2 AFR <8% -----
BASE: TOTAL RESPONDENTS	218	212
NOISE LEVEL/QUIET	2 0.9	2 0.9
OTHER MISCELLANEOUS MENTIONS	14 6.4	5 2.4
NONE/DON'T KNOW/NO ANSWER	6 2.8	3 1.4

EXHIBIT G1



Desktop HDD

Data Sheet

The Power of One

- Seagate brings over 30 years of trusted performance and reliability to the Seagate® Desktop HDDs—now available in capacities up to 5TB
- Increase your capacity and drive down costs with up to 1.33TB-per-disk hard drive technology
- SATA 6Gb/s interface optimizes burst performance
- Seagate AcuTrac™ servo technology delivers dependable performance
- Free DiscWizard™ software enables high capacities on legacy PC BIOS systems
- Seagate Secure™ models provide hardware-based data security and deliver an Instant Secure Erase feature for safe, fast and easy drive retirement¹
- Seagate Secure models meet the NIST 800-88 media sanitization specification and also support the Trusted Computer Group (TCG) Opal standard¹



Best-Fit Applications

- Desktop or all-in-one PCs
- Home servers
- Entry-level direct-attached storage devices (DAS)

¹ Seagate Secure models are not available in all countries. May require TCG-compliant host or controller support.



Desktop HDD



Specifications	3TB
Standard Model Numbers ¹	ST3000DM001
Seagate Secure™ Model Numbers	ST3000DM002
Interface	SATA 6Gb/s
Cache	64MB
Model Name	formerly Barracuda
Performance	
SATA Transfer Rates Supported (Gb/s)	6.0/3.0/1.5
Max Sustainable Transfer Rate	210MB/s
Configuration/Organization	
Heads/Disks	6/3
Bytes per Sector	512E
Voltage	
Voltage Tolerance, Inc. Noise (5V)	±5%
Voltage Tolerance, Inc. Noise (12V)	±10%
Reliability/Data Integrity	
Annualized Failure Rate (AFR)	<1%
Contact Start/Stop Cycles ²	—
Load/Unload Cycles ³	300,000
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E14
Workload Rate Limit (TB/year)	55
Power-On Hours	2,400
Warranty, Limited (years) ⁴	2
Power Management	
Startup Power (12V, A)	2.5
Average Operating Power	8W
Idle Average (W)	5.4W
Standby/Sleep Mode	0.75W/0.75W
Environmental/Temperature	
Operating (ambient, min)	0 °C
Operating (drive case, max)	60 °C
Nonoperating (ambient, min)	-40 °C
Nonoperating (ambient, max)	70 °C
Halogen Free	Yes
RoHS Compliance	Yes
Physical	
Height (mm/in)	26.11mm/1.028in
Width (mm/in, max)	101.6mm/4in
Depth (mm/in, max)	146.99mm/5.787in
Weight (g/lb)	626g/1.38lb
Carton Unit Quantity	20
Cartons per Pallet / Cartons per Layer	40 / 8
Special Features	
Seagate AcuTrac™ Technology	Yes

¹ Seagate ships the 500GB, 320GB and 250GB models in both 4K- and 512-byte sectors. SmartAlign technology is included on 4K sector drives. Both drives are functionally and physically equivalent.

² At 25°C and 50% relative humidity.

³ Load/Unload tested to 600,000 cycles.

⁴ Extended warranty products available. Consult your distributor for details.

EXHIBIT G2



Desktop HDD



Specifications	3TB
Standard Model Numbers ¹	ST3000DM001
Seagate Secure™ Model Numbers	ST3000DM002
Interface	SATA 6Gb/s
Cache	64MB
Model Name	formerly Barracuda
Performance	
SATA Transfer Rates Supported (Gb/s)	6.0/3.0/1.5
Max Sustainable Transfer Rate	210MB/s
Configuration/Organization	
Heads/Disks	6/3
Bytes per Sector	512E
Voltage	
Voltage Tolerance, Inc. Noise (5V)	±5%
Voltage Tolerance, Inc. Noise (12V)	±10%
Reliability/Data Integrity	
Annualized Failure Rate (AFR)	<8%
Contact Start/Stop Cycles ²	—
Load/Unload Cycles ³	300,000
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E14
Workload Rate Limit (TB/year)	55
Power-On Hours	2,400
Warranty, Limited (years) ⁴	2
Power Management	
Startup Power (12V, A)	2.5
Average Operating Power	8W
Idle Average (W)	5.4W
Standby/Sleep Mode	0.75W/0.75W
Environmental/Temperature	
Operating (ambient, min)	0 °C
Operating (drive case, max)	60 °C
Nonoperating (ambient, min)	-40 °C
Nonoperating (ambient, max)	70 °C
Halogen Free	Yes
RoHS Compliance	Yes
Physical	
Height (mm/in)	26.11mm/1.028in
Width (mm/in, max)	101.6mm/4in
Depth (mm/in, max)	146.99mm/5.787in
Weight (g/lb)	626g/1.38lb
Carton Unit Quantity	20
Cartons per Pallet / Cartons per Layer	40 / 8
Special Features	
Seagate AcuTrac™ Technology	Yes

¹ Seagate ships the 500GB, 320GB and 250GB models in both 4K- and 512-byte sectors. SmartAlign technology is included on 4K sector drives. Both drives are functionally and physically equivalent.

² At 25°C and 50% relative humidity.

³ Load/Unload tested to 600,000 cycles.

⁴ Extended warranty products available. Consult your distributor for details.

EXHIBIT H

[illegible]

respid	interview_start	interview_end	LOI	Q15 : What is your gender? What is your age?	Q20 : Please enter your age:	Q25 : In which of the following states do you live?	region	Q30 : Which of the following devices are you using right now to take this survey?	Q40_1 : An advertising, public relations or marketing agency or advertising department of a company	Q40_2 : A market research firm or a department of a company	Q40_3 : A company that makes computer hardware or accessories	Q40_4 : None of these	Q50 : Q50	Q55 : Considering any hard-drive(s) that you purchased during the past six years, please indicate the following:	Q55_1 : Seagate	Q55_2 : Western Digital (WD)	Q55_3 : HGST, or its predecessors Hitachi Global Storage Technologies or Hitachi	Q55_4 : Toshiba	Q55_5 : Other please specify	Q55_5_other : Other (please specify)	Q55_6 : Don't know/ Not sure	Q70_1 : 1 TB	Q70_2 : 2 TB	Q70_3 : 3 TB	Q70_4 : 4 TB	Q70_5 : 5 TB	Q70_6 : Other	Q70_7 : Don't know / Not sure	cell	Q75 : What year was your most recent purchase of an external or internal hard drive which was 1 to 5 TB capacity?	Q75_1 : 1 to 5 TB capacity?	Q75_2 : 6 to 10 TB capacity?	Q75_3 : 11 to 15 TB capacity?	Q75_4 : 16 to 20 TB capacity?	Q75_5 : 21 to 25 TB capacity?	Q75_6 : 26 to 30 TB capacity?	Q75_7 : 31 to 35 TB capacity?	Q75_8 : 36 to 40 TB capacity?	Q75_9 : 41 to 45 TB capacity?	Q75_10 : 46 to 50 TB capacity?	Q75_11 : 51 to 55 TB capacity?	Q75_12 : 56 to 60 TB capacity?	Q75_13 : 61 to 65 TB capacity?	Q75_14 : 66 to 70 TB capacity?	Q75_15 : 71 to 75 TB capacity?	Q75_16 : 76 to 80 TB capacity?	Q75_17 : 81 to 85 TB capacity?	Q75_18 : 86 to 90 TB capacity?	Q75_19 : 91 to 95 TB capacity?	Q75_20 : 96 to 100 TB capacity?	Q75_21 : 101 to 105 TB capacity?	Q75_22 : 106 to 110 TB capacity?	Q75_23 : 111 to 115 TB capacity?	Q75_24 : 116 to 120 TB capacity?	Q75_25 : 121 to 125 TB capacity?	Q75_26 : 126 to 130 TB capacity?	Q75_27 : 131 to 135 TB capacity?	Q75_28 : 136 to 140 TB capacity?	Q75_29 : 141 to 145 TB capacity?	Q75_30 : 146 to 150 TB capacity?	Q75_31 : 151 to 155 TB capacity?	Q75_32 : 156 to 160 TB capacity?	Q75_33 : 161 to 165 TB capacity?	Q75_34 : 166 to 170 TB capacity?	Q75_35 : 171 to 175 TB capacity?	Q75_36 : 176 to 180 TB capacity?	Q75_37 : 181 to 185 TB capacity?	Q75_38 : 186 to 190 TB capacity?	Q75_39 : 191 to 195 TB capacity?	Q75_40 : 196 to 200 TB capacity?	Q75_41 : 201 to 205 TB capacity?	Q75_42 : 206 to 210 TB capacity?	Q75_43 : 211 to 215 TB capacity?	Q75_44 : 216 to 220 TB capacity?	Q75_45 : 221 to 225 TB capacity?	Q75_46 : 226 to 230 TB capacity?	Q75_47 : 231 to 235 TB capacity?	Q75_48 : 236 to 240 TB capacity?	Q75_49 : 241 to 245 TB capacity?	Q75_50 : 246 to 250 TB capacity?	Q75_51 : 251 to 255 TB capacity?	Q75_52 : 256 to 260 TB capacity?	Q75_53 : 261 to 265 TB capacity?	Q75_54 : 266 to 270 TB capacity?	Q75_55 : 271 to 275 TB capacity?	Q75_56 : 276 to 280 TB capacity?	Q75_57 : 281 to 285 TB capacity?	Q75_58 : 286 to 290 TB capacity?	Q75_59 : 291 to 295 TB capacity?	Q75_60 : 296 to 300 TB capacity?	Q75_61 : 301 to 305 TB capacity?	Q75_62 : 306 to 310 TB capacity?	Q75_63 : 311 to 315 TB capacity?	Q75_64 : 316 to 320 TB capacity?	Q75_65 : 321 to 325 TB capacity?	Q75_66 : 326 to 330 TB capacity?	Q75_67 : 331 to 335 TB capacity?	Q75_68 : 336 to 340 TB capacity?	Q75_69 : 341 to 345 TB capacity?	Q75_70 : 346 to 350 TB capacity?	Q75_71 : 351 to 355 TB capacity?	Q75_72 : 356 to 360 TB capacity?	Q75_73 : 361 to 365 TB capacity?	Q75_74 : 366 to 370 TB capacity?	Q75_75 : 371 to 375 TB capacity?	Q75_76 : 376 to 380 TB capacity?	Q75_77 : 381 to 385 TB capacity?	Q75_78 : 386 to 390 TB capacity?	Q75_79 : 391 to 395 TB capacity?	Q75_80 : 396 to 400 TB capacity?	Q75_81 : 401 to 405 TB capacity?	Q75_82 : 406 to 410 TB capacity?	Q75_83 : 411 to 415 TB capacity?	Q75_84 : 416 to 420 TB capacity?	Q75_85 : 421 to 425 TB capacity?	Q75_86 : 426 to 430 TB capacity?	Q75_87 : 431 to 435 TB capacity?	Q75_88 : 436 to 440 TB capacity?	Q75_89 : 441 to 445 TB capacity?	Q75_90 : 446 to 450 TB capacity?	Q75_91 : 451 to 455 TB capacity?	Q75_92 : 456 to 460 TB capacity?	Q75_93 : 461 to 465 TB capacity?	Q75_94 : 466 to 470 TB capacity?	Q75_95 : 471 to 475 TB capacity?	Q75_96 : 476 to 480 TB capacity?	Q75_97 : 481 to 485 TB capacity?	Q75_98 : 486 to 490 TB capacity?	Q75_99 : 491 to 495 TB capacity?	Q75_100 : 496 to 500 TB capacity?	Q75_101 : 501 to 505 TB capacity?	Q75_102 : 506 to 510 TB capacity?	Q75_103 : 511 to 515 TB capacity?	Q75_104 : 516 to 520 TB capacity?	Q75_105 : 521 to 525 TB capacity?	Q75_106 : 526 to 530 TB capacity?	Q75_107 : 531 to 535 TB capacity?	Q75_108 : 536 to 540 TB capacity?	Q75_109 : 541 to 545 TB capacity?	Q75_110 : 546 to 550 TB capacity?	Q75_111 : 551 to 555 TB capacity?	Q75_112 : 556 to 560 TB capacity?	Q75_113 : 561 to 565 TB capacity?	Q75_114 : 566 to 570 TB capacity?	Q75_115 : 571 to 575 TB capacity?	Q75_116 : 576 to 580 TB capacity?	Q75_117 : 581 to 585 TB capacity?	Q75_118 : 586 to 590 TB capacity?	Q75_119 : 591 to 595 TB capacity?	Q75_120 : 596 to 600 TB capacity?	Q75_121 : 601 to 605 TB capacity?	Q75_122 : 606 to 610 TB capacity?	Q75_123 : 611 to 615 TB capacity?	Q75_124 : 616 to 620 TB capacity?	Q75_125 : 621 to 625 TB capacity?	Q75_126 : 626 to 630 TB capacity?	Q75_127 : 631 to 635 TB capacity?	Q75_128 : 636 to 640 TB capacity?	Q75_129 : 641 to 645 TB capacity?	Q75_130 : 646 to 650 TB capacity?	Q75_131 : 651 to 655 TB capacity?	Q75_132 : 656 to 660 TB capacity?	Q75_133 : 661 to 665 TB capacity?	Q75_134 : 666 to 670 TB capacity?	Q75_135 : 671 to 675 TB capacity?	Q75_136 : 676 to 680 TB capacity?	Q75_137 : 681 to 685 TB capacity?	Q75_138 : 686 to 690 TB capacity?	Q75_139 : 691 to 695 TB capacity?	Q75_140 : 696 to 700 TB capacity?	Q75_141 : 701 to 705 TB capacity?	Q75_142 : 706 to 710 TB capacity?	Q75_143 : 711 to 715 TB capacity?	Q75_144 : 716 to 720 TB capacity?	Q75_145 : 721 to 725 TB capacity?	Q75_146 : 726 to 730 TB capacity?	Q75_147 : 731 to 735 TB capacity?	Q75_148 : 736 to 740 TB capacity?	Q75_149 : 741 to 745 TB capacity?	Q75_150 : 746 to 750 TB capacity?	Q75_151 : 751 to 755 TB capacity?	Q75_152 : 756 to 760 TB capacity?	Q75_153 : 761 to 765 TB capacity?	Q75_154 : 766 to 770 TB capacity?	Q75_155 : 771 to 775 TB capacity?	Q75_156 : 776 to 780 TB capacity?	Q75_157 : 781 to 785 TB capacity?	Q75_158 : 786 to 790 TB capacity?	Q75_159 : 791 to 795 TB capacity?	Q75_160 : 796 to 800 TB capacity?	Q75_161 : 801 to 805 TB capacity?	Q75_162 : 806 to 810 TB capacity?	Q75_163 : 811 to 815 TB capacity?	Q75_164 : 816 to 820 TB capacity?	Q75_165 : 821 to 825 TB capacity?	Q75_166 : 826 to 830 TB capacity?	Q75_167 : 831 to 835 TB capacity?	Q75_168 : 836 to 840 TB capacity?	Q75_169 : 841 to 845 TB capacity?	Q75_170 : 846 to 850 TB capacity?	Q75_171 : 851 to 855 TB capacity?	Q75_172 : 856 to 860 TB capacity?	Q75_173 : 861 to 865 TB capacity?	Q75_174 : 866 to 870 TB capacity?	Q75_175 : 871 to 875 TB capacity?	Q75_176 : 876 to 880 TB capacity?	Q75_177 : 881 to 885 TB capacity?	Q75_178 : 886 to 890 TB capacity?	Q75_179 : 891 to 895 TB capacity?	Q75_180 : 896 to 900 TB capacity?	Q75_181 : 901 to 905 TB capacity?	Q75_182 : 906 to 910 TB capacity?	Q75_183 : 911 to 915 TB capacity?	Q75_184 : 916 to 920 TB capacity?	Q75_185 : 921 to 925 TB capacity?	Q75_186 : 926 to 930 TB capacity?	Q75_187 : 931 to 935 TB capacity?	Q75_188 : 936 to 940 TB capacity?	Q75_189 : 941 to 945 TB capacity?	Q75_190 : 946 to 950 TB capacity?	Q75_191 : 951 to 955 TB capacity?	Q75_192 : 956 to 960 TB capacity?	Q75_193 : 961 to 965 TB capacity?	Q75_194 : 966 to 970 TB capacity?	Q75_195 : 971 to 975 TB capacity?	Q75_196 : 976 to 980 TB capacity?	Q75_197 : 981 to 985 TB capacity?	Q75_198 : 986 to 990 TB capacity?	Q75_199 : 991 to 995 TB capacity?	Q75_200 : 996 to 1000 TB capacity?	Q75_201 : 1001 to 1005 TB capacity?	Q75_202 : 1006 to 1010 TB capacity?	Q75_203 : 1011 to 1015 TB capacity?	Q75_204 : 1016 to 1020 TB capacity?	Q75_205 : 1021 to 1025 TB capacity?	Q75_206 : 1026 to 1030 TB capacity?	Q75_207 : 1031 to 1035 TB capacity?	Q75_208 : 1036 to 1040 TB capacity?	Q75_209 : 1041 to 1045 TB capacity?	Q75_210 : 1046 to 1050 TB capacity?	Q75_211 : 1051 to 1055 TB capacity?	Q75_212 : 1056 to 1060 TB capacity?	Q75_213 : 1061 to 1065 TB capacity?	Q75_214 : 1066 to 1070 TB capacity?	Q75_215 : 1071 to 1075 TB capacity?	Q75_216 : 1076 to 1080 TB capacity?	Q75_217 : 1081 to 1085 TB capacity?	Q75_218 : 1086 to 1090 TB capacity?	Q75_219 : 1091 to 1095 TB capacity?	Q75_220 : 1096 to 1100 TB capacity?	Q75_221 : 1101 to 1105 TB capacity?	Q75_222 : 1106 to 1110 TB capacity?	Q75_223 : 1111 to 1115 TB capacity?	Q75_224 : 1116 to 1120 TB capacity?	Q75_225 : 1121 to 1125 TB capacity?	Q75_226 : 1126 to 1130 TB capacity?	Q75_227 : 1131 to 1135 TB capacity?	Q75_228 : 1136 to 1140 TB capacity?	Q75_229 : 1141 to 1145 TB capacity?	Q75_230 : 1146 to 1150 TB capacity?	Q75_231 : 1151 to 1155 TB capacity?	Q75_232 : 1156 to 1160 TB capacity?	Q75_233 : 1161 to 1165 TB capacity?	Q75_234 : 1166 to 1170 TB capacity?	Q75_235 : 1171 to 1175 TB capacity?	Q75_236 : 1176 to 1180 TB capacity?	Q75_237 : 1181 to 1185 TB capacity?	Q75_238 : 1186 to 1190 TB capacity?	Q75_239 : 1191 to 1195 TB capacity?	Q75_240 : 1196 to 1200 TB capacity?	Q75_241 : 1201 to 1205 TB capacity?	Q75_242 : 1206 to 1210 TB capacity?	Q75_243 : 1211 to 1215 TB capacity?	Q75_244 : 1216 to 1220 TB capacity?	Q75_245 : 1221 to 1225 TB capacity?	Q75_246 : 1226 to 1230 TB capacity?	Q75_247 : 1231 to 1235 TB capacity?	Q75_248 : 1236 to 1240 TB capacity?	Q75_249 : 1241 to 1245 TB capacity?	Q75_250 : 1246 to 1250 TB capacity?	Q75_251 : 1251 to 1255 TB capacity?	Q75_252 : 1256 to 1260 TB capacity?	Q75_253 : 1261 to 1265 TB capacity?	Q75_254 : 1266 to 1270 TB capacity?	Q75_255 : 1271 to 1275 TB capacity?	Q75_256 : 1276 to 1280 TB capacity?	Q75_257 : 1281 to 1285 TB capacity?	Q75_258 : 1286 to 1290 TB capacity?	Q75_259 : 1291 to 1295 TB capacity?	Q75_260 : 1296 to 1300 TB capacity?	Q75_261 : 1301 to 1305 TB capacity?	Q75_262 : 1306 to 1310 TB capacity?	Q75_263 : 1311 to 1315 TB capacity?	Q75_264 : 1316 to 1320 TB capacity?	Q75_265 : 1321 to 1325 TB capacity?	Q75_266 : 1326 to 1330 TB capacity?	Q75_267 : 1331 to 1335 TB capacity?	Q75_268 : 1336 to 1340 TB capacity?	Q75_269 : 1341 to 1345 TB capacity?	Q75_270 : 1346 to 1350 TB capacity?	Q75_271 : 1351 to 1355 TB capacity?	Q75_272 : 1356 to 1360 TB capacity?	Q75_273 : 1361 to 1365 TB capacity?	Q75_274 : 1366 to 1370 TB capacity?	Q75_275 : 1371 to 1375 TB capacity?	Q75_276 : 1376 to 1380 TB capacity?	Q75_277 : 1381 to 1385 TB capacity?	Q75_278 : 1386 to 1390 TB capacity?	Q75_279 : 1391 to 1395 TB capacity?	Q75_280 : 1396 to 1400 TB capacity?	Q75_281 : 1401 to 1405 TB capacity?	Q75_282 : 1406 to 1410 TB capacity?	Q75_283 : 1411 to 1415 TB capacity?	Q75_284 : 1416 to 1420 TB capacity?	Q75_285 : 1421 to 1425 TB capacity?	Q75_286 : 1426 to 1430 TB capacity?	Q75_287 : 1431 to 1435 TB capacity?	Q75_288 : 1436 to 1440 TB capacity?	Q75_289 : 1441 to 1445 TB capacity?	Q75_290 : 1446 to 1450 TB capacity?	Q75_291 : 1451 to 1455 TB capacity?	Q75_292 : 1456 to 1460 TB capacity?	Q75_293 : 1461 to 1465 TB capacity?	Q75_294 : 1466 to 1470 TB capacity?	Q75_295 : 1471 to 1475 TB capacity?	Q75_296 : 1476 to 1480 TB capacity?	Q75_297 : 1481 to 1485 TB capacity?	Q75_298 : 1486 to 1490 TB capacity?	Q75_299 : 1491 to 1495 TB capacity?	Q75_300 : 1496 to 1500 TB capacity?	Q75_301 : 1501 to 1505 TB capacity?	Q75_302 : 1506 to 1510 TB capacity?	Q75_303 : 1511 to 1515 TB capacity?	Q75_304 : 1516 to 1520 TB capacity?	Q75_305 : 1521 to 1525 TB capacity?	Q75_306 : 1526 to 1530 TB capacity?	Q75_307 : 1531 to 1535 TB capacity?	Q75_308 : 1536 to 1540 TB capacity?	Q75_309 : 1541 to 1545 TB capacity?	Q75_310 : 1546 to 1550 TB capacity?	Q75_311 : 1551 to 1555 TB capacity?	Q75_312 : 1556 to 1560 TB capacity?	Q75_313 : 1561 to 1565 TB capacity?	Q75_314 : 1566 to 1570 TB capacity?	Q75_315 : 1571 to 1575 TB capacity?	Q75_316 : 1576 to 1580 TB capacity?	Q75_317 : 1581 to 1585 TB capacity?	Q75_318 : 1586 to 1590 TB capacity?	Q75_319 : 1591 to 1595 TB capacity?	Q75_320 : 1596 to 1600 TB capacity?	Q75_321 : 1601 to 1605 TB capacity?	Q75_322 : 1606 to 1610 TB capacity?	Q75_323 : 1611 to 1615 TB capacity?	Q75_324 : 1616 to 1620 TB capacity?	Q75_325 : 1621 to 1625 TB capacity?	Q75_326 : 1626 to 1630 TB capacity?	Q75_327 : 1631 to 1635 TB capacity?	Q75_328 : 1636 to 1640 TB capacity?	Q75_329 : 1641 to 1645 TB capacity?	Q75_330 : 1646 to 1650 TB capacity?	Q75_331 : 1651 to 1655 TB capacity?	Q75_332 : 1656 to 1660 TB capacity?	Q75_333 : 1661 to 1665 TB capacity?	Q75_334 : 1666 to 1670 TB capacity?	Q75_335 : 1671 to 1675 TB capacity?	Q75_336 : 1676 to 1680 TB capacity?	Q75_337 : 1681 to 1685 TB capacity?	Q75_338 : 1686 to 1690 TB capacity?	Q75_339 : 1691 to 1695 TB capacity?	Q75_340 : 1696 to 1700 TB capacity?	Q75_341 : 1701 to 1705 TB capacity?	Q75_342 : 1706 to 1710 TB capacity?	Q75_343 : 1711 to 1715 TB capacity?	Q75_344 : 1716 to 1720 TB capacity?	Q75_345 : 1721 to 1725 TB capacity?	Q75_346 : 1726 to 1730 TB capacity?	Q75_347 : 1731 to 1735 TB capacity?	Q75_348 : 1736 to 1740 TB capacity?	Q75_349 : 1741 to 1745 TB capacity?	Q75_350 : 1746 to 1750 TB capacity?	Q75_351 : 1751 to 1755 TB capacity?	Q75_352 : 1756 to 1760 TB capacity?	Q75_353 : 1761 to 1765 TB capacity?	Q75_354 : 1766 to 1770 TB capacity?	Q75_355 : 1771 to 1775 TB capacity?	Q75_356 : 1776 to 1780 TB capacity?	Q75_357 : 1781 to 1785 TB capacity?	Q75_358 : 1786 to 1790 TB capacity?	Q75_359 : 1791 to 1795 TB capacity?	Q75_360 : 1796 to 1800 TB capacity?	Q75_361 : 1801 to 1805 TB capacity?	Q75_362 : 1806 to 1810 TB capacity?	Q75_363 : 1811 to 1815 TB capacity?	Q75_364 : 1816 to 1820 TB capacity?	Q75_365 : 1821 to 1825 TB capacity?	Q75_366 : 1826 to 1830 TB capacity?	Q75_367 : 1831 to 1835 TB capacity?	Q75_368 : 1836 to 1840 TB capacity?	Q75_369 : 1841 to 1845 TB capacity?	Q75_370 : 1846 to 1850 TB capacity?	Q75_371 : 1851 to 1855 TB capacity?	Q75_372 : 1856 to 1860 TB capacity?	Q75_373 : 1861 to 1865 TB capacity?	Q75_374 : 1866 to 1870 TB capacity?	Q75_375 : 1871 to 1875 TB capacity?	Q75_376 : 1876 to 1880 TB capacity?	Q75_377 : 1881 to 1885 TB capacity?	Q75_378 : 1886 to 1890 TB capacity?	Q75_379 : 1891 to 1895 TB capacity?	Q75_380 : 1896 to 1900 TB capacity?	Q75_381 : 1901 to 1905 TB capacity?	Q75_382 : 1906 to 1910 TB capacity?	Q75_383 : 1911 to 1915 TB capacity?	Q75_384 : 1916 to 1920 TB capacity?	Q75_385 : 1921 to 1925 TB capacity?	Q75_386 : 1926 to 1930 TB capacity?	Q75_387 : 1931 to 1935 TB capacity?	Q75_388 : 1936 to 1940 TB capacity?	Q75_389 : 1941 to 1945 TB capacity?	Q75_390 : 1946 to 1950 TB capacity?	Q75_391 : 1951 to 1955 TB capacity?	Q75_392 : 1956 to 1960 TB capacity?	Q75_393 : 1961 to 1965 TB capacity?	Q75_394 : 1966 to 1970 TB capacity?	Q75_395 : 1971 to 1975 TB capacity?	Q75_396 : 1976 to 1980 TB capacity?	Q75_397 : 1981 to 1985 TB capacity?	Q75_398 : 1986 to 1990 TB capacity?	Q75_399 : 1991 to 1995 TB capacity?	Q75_400 : 1996 to 2000 TB capacity?	Q75_401 : 2001 to 2005 TB capacity?	Q75_402 : 2006 to 2010 TB capacity?	Q75_403 : 2011 to 2015 TB capacity?	Q75_404 : 2016 to 2020 TB capacity?	Q75_405 : 2021 to 2025 TB capacity?	Q75_406 : 2026 to 2030 TB capacity?	Q75_407 : 2031 to 2035 TB capacity?	Q75_408 : 2036 to 2040 TB capacity?	Q75_409 : 2041 to 2045 TB capacity?	Q75_410 : 2046 to 2050 TB capacity?	Q75_411 : 2051 to 2055 TB capacity?	Q75_412 : 2056 to 2060 TB capacity?	Q75_413 : 2061 to 2065 TB capacity?	Q75_414 : 2066 to 2070 TB capacity?	Q75_415 : 2071 to 2075 TB capacity?	Q75_416 : 2076 to 2080 TB capacity?	Q75_417 : 2081 to 2085 TB capacity?	Q75_418 : 2086 to 2090 TB capacity?	Q75_419 : 2091 to 2095 TB capacity?	Q75_420 : 2096 to 2100 TB capacity?	Q75_421 : 2101 to 2105 TB capacity?	Q75_422 : 2106 to 2110 TB capacity?	Q75_423 : 2111 to 2115 TB capacity?	Q75_424 : 2116 to 2120 TB capacity?	Q75_425 : 2121 to 2125 TB capacity?	Q75_426 : 2126 to 2130 TB capacity?	Q75_427 : 2131 to 2135 TB capacity?	Q75_428 : 2136 to 2140 TB capacity?	Q75_429 : 2141 to 2145 TB capacity?	Q75_430 : 2146 to 2150 TB capacity?	Q75_431 : 2151 to 2155 TB capacity?	Q75_432 : 2156 to 2160 TB capacity?	Q75_433 : 2161 to 2165 TB capacity?	Q75_434 : 2166 to 2170 TB capacity?	Q75_435 : 2171 to 2175 TB capacity?	Q75_436 : 2176 to 2180 TB capacity?	Q75_437 : 2181 to 2185 TB capacity?	Q75_438 : 2186 to 2190 TB capacity?	Q75_439 : 2191 to 2195 TB capacity?	Q75_440 : 2196 to 2200 TB capacity?	Q75_441 : 2201 to 2205 TB capacity?	Q75_442 : 2206 to 2210 TB capacity?	Q75_443 : 2211 to 2215 TB capacity?	Q75_444 : 2216 to 2220 TB capacity?	Q75_445 : 2221 to 2225 TB capacity?	Q75_446 : 2226 to 2230 TB capacity?	Q75_447 : 2231 to 2235 TB capacity?	Q75_448 : 2236 to 2240 TB capacity?	Q75_449 : 2241 to 2245 TB capacity?	Q75_450 : 2246 to 2250 TB capacity?	Q75_451 : 2251 to 2255 TB capacity?	Q75_452 : 2256 to 2260 TB capacity?	Q75_453 : 2261 to 2265 TB capacity?	Q75_454 : 2266 to 2270 TB capacity?	Q75_455 : 2271 to 2275 TB capacity?	Q75_456 : 2276 to 2280 TB capacity?	Q75_457 : 2281 to 2285 TB capacity?	Q75_458 : 2286 to 2290 TB capacity?	Q75_459 : 2291 to 2295 TB capacity?	Q75_460 : 2296 to 2300 TB capacity?	Q75_461 : 2301 to 2305 TB capacity?	Q75_462 : 2306 to 2310 TB capacity?	Q75_463 : 2311 to 2315 TB capacity?	Q75_464 : 2316 to 2320 TB capacity?	Q75_465 : 2321 to 2325 TB capacity?	Q75_466 : 2326 to 2330 TB capacity?	Q75_467 : 2331 to 2335 TB capacity?	Q75_468 : 2336 to 2340 TB capacity?	Q75_469 : 2341 to 2345 TB capacity?	Q75_470 : 2346 to 2350 TB capacity?	Q75_471 : 2351 to 2355 TB capacity?	Q75_472 : 2356 to 2360 TB capacity?	Q75_473 : 2361 to 2365 TB capacity?	Q75_474 : 2366 to 2370 TB capacity?	Q75_475 : 2371 to 2375 TB capacity?	Q75_476 : 2376 to 2380 TB capacity?	Q75_477 : 2381 to 2385 TB capacity?	Q75_478 : 2386 to 2390 TB capacity?	Q75_479 : 2391 to 2395 TB capacity?
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EXHIBIT I

December 28, 2017

Q260 Reasons for Purchase Intent**Positive (Grand Net)****Ease/Convenience (Net)**

- 01 Easy/simple/easy to use
- 02 Other Miscellaneous Ease/Convenience Mentions (List)

Brand Related (Net)

- 03 Good brand/made by Seagate/Seagate is a good brand (Unspec)
- 04 Use/have used their products before (and liked them)
- 05 Reliable/dependable/reputable brand/trust Seagate
- 06 Familiar/well known/name brand
- 07 Long history/30 years of history
- 08 Other Brand Related Mentions (List)

Speed Related (Net)

- 09 Fast/speed/high speed
- 10 Fast/faster transfer speeds
- 11 Other Speed Related Mentions (List)

Capacity (Net)

- 12 Good memory/storage capacity (Unspec)
- 13 Large storage capacity/has a lot of space/can save/backup a lot of files
- 14 3TB size/storage capacity
- 15 5TB size/storage capacity
- 16 Other Capacity Mentions (List)

Appearance (Net)

- 17 The appearance/style/design/looks attractive (Unspec)
- 18 Other Appearance Mentions (list)

Rugged/Durable/Reliable (Net)

Failure Rate (SubNet) [CODE AT SINGLE MENTIONS]

- 19 <1% failure rate

Miscellaneous Rugged/Durable/Reliable [CODE AT SINGLE MENTIONS]

- 20 Reliable/dependable
- 21 Durable
- 22 Long lasting
- 23 Able to withstand extreme temperatures

General Functionality (Net)

- 24 Good performance/would work/do the job
- 25 Like the specs/features (Unspec)
- 26 Other General Functionality Mentions (List)

General Quality (Net)

- 27 Good/high quality
- 28 Other General Quality Mentions (List)

December 28, 2017

Useful/Needed Product (Net)

- 29 Useful/helpful (Unspec)
- 30 Something I need/the kind of product I've been looking for
- 31 Meets my needs/gives me everything I need
- 32 Other Useful/Needed Product Mentions (List)

Usage (Net)

- 33 Good for storing photos
- 34 Good for a backup/to store/backup data/files
- 35 Other Usage Mentions (List)

Cost/Economy (Net)

- 36 Good/reasonable price/cost/it's affordable
- 37 Good price for size/for storage capacity
- 38 Good value/deal
- 39 Other Cost/Economy Mentions (List)

Miscellaneous Positive

- 40 Looks/sounds good/interesting/a good product/hard drive/I'd like it (Unspec)
- 41 Like the size/good size (Unspec)
- 42 Compatible with my computer/present OS
- 43 New/different/unique
- 44 Modern/technologically advanced/innovative/cutting edge product
- 45 Warranty/good warranty/warranties/1 year/2 year/extended warranty
- 46 Safe/secure
- 47 Strong/powerful
- 48 Like description/information given (All Mentions)
- 49 Other Miscellaneous Positive Mentions (List)

Negative (Grand Net)**Capacity (Net)**

- 50 Small storage capacity/want a larger capacity drive (Unspec)
- 51 Large storage capacity/more storage than I want/need
- 52 Other Capacity Mentions (List)

Lack of Reliability (Net)**Failure Rate (SubNet)**

- 53 Dislike <8% failure rate

Miscellaneous Lack of Reliability

- 54 Other Miscellaneous Lack of Reliability Mentions (List)

Lack of Need (Net)**Prefer/Use Others (SubNet)**

- 55 Already have one/satisfied with what I currently have/use (Unspec)
- 56 Prefer/use Western Digital
- 57 Prefer SSD drives
- 58 Other Prefer/Use Others Mentions (List)

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Miscellaneous Lack of Need

- 59 Don't need it/not useful for me (Unspec)
- 60 Don't have/use a desktop/only use a laptop/tablet
- 61 Other Lack of Need Mentions (List)

Miscellaneous Negative

- 62 All Negative price mentions: too expensive, costs more than others, can't afford it
- 63 Dislike the brand/Seagate (All Mentions)
- 64 Other Miscellaneous Negative Mentions (List)

Neutral (Grand Net)

Cost Concerns (Net)

- 65 Depends on price/need to know the price (Unspec)
- 66 Depends on price comparison to others
- 67 Other Cost Concerns Mentions (List)

Need More Information (Net)

- 68 Need to do research/read reviews/get more information
- 69 Need to compare with others/see what else is available
- 70 Not familiar with the brand/need to know more about the brand/manufacturer
- 71 Other Need More Information Mentions (List)

Speed Related (Net)

- 72 Other Speed Related Mentions (List)

Miscellaneous Neutral

- 73 Depends on need: if I needed (another) hard drive, if I needed that much storage space
- 74 Haven't decided/not sure about it yet
- 75 Other Miscellaneous Neutral Mentions (List)

- 76 Don't know/nothing/no answer

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Q270 Main uses of the hard-drive(s) you bought in the past six years?

Specific File Types (Net)

Media Files (SubNet)

Photos/Image Files (Sub-SubNet)

- 01 Storing/backing up photos/images
- 02 Other Photos/Image Files Mentions (List)

Video Files (Sub-SubNet)

- 03 Storing/backing up video/movies
- 04 Other Video Files Mentions (List)

Music Files (Sub-SubNet)

- 05 Music/audio files
- 06 Other Music Files Mentions (list)

Miscellaneous Media Files

- 07 For gaming/storing games/external hard drive for game console
- 08 Other Miscellaneous Media Files

Miscellaneous Specific File Types

- 09 Storing/backing up documents
- 10 For schoolwork
- 11 For business purposes
- 12 For personal use
- 13 Large files
- 14 Important documents
- 15 Other Miscellaneous Specific File Types Mentions (List)

General Storage/Back Up (Net)

- 16 For backing up/back up purposes/as a backup drive/to back up (entire) computer/laptop
- 17 Data storage/storing (old) files
- 18 For extra space/more storage capacity
- 19 Clearing out hard drive space to improve performance/allow for more speed
- 20 To free up space on my computer/laptop
- 21 For secure storage/back up in case hard drive crashes
- 22 As external drive/storage
- 23 Other General Storage/Back Up Mentions (List)

Miscellaneous

- 24 Transfer files/transfer from device(s) to computer/from one computer to another
- 25 To replace old hard drive/my hard drive died
- 26 Other Miscellaneous Mentions (List)
- 27 Nothing
- 28 Don't know

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Q280 hard-drive features or characteristics that you consider important when deciding which hard-drive to buy?**General Backup (Net)**

- 01 Ability to backup/save/store data/files
- 02 Other General Back Up Mentions (List)

Speed Related (Net)

- 03 Speed/that it's fast (Unspec)
- 04 Transfer speed
- 05 Disc rotational speed
- 06 Access speed
- 07 Read/write rates
- 08 Download speed
- 09 Other Speed Related Mentions (List)

Ease/Convenience (Net)

- 10 Ease of use/that it's easy/simple to use
- 11 Easy to install
- 12 Other Ease/Convenience Mentions (List)

Connections (Net)

- 13 Connectivity/connection type (Unspec)
- 14 USB connection (Unspec)
- 15 Wi-Fi/wireless connectivity
- 16 Other Connections Mentions (List)

Compatibility (Net)

- 17 Compatibility/compatible with my computer/OS/devices (Unspec)
- 18 Other Compatibility Mentions (List)

Ruggedness/Durability/Dependability (Net)**Failure Rate (SubNet)**

- 19 Failure rate
- 20 Low risk of failure
- 21 Not failing/knowning it won't crash
- 22 Other Failure Rate Mentions (List)

Miscellaneous Ruggedness/Durability/Dependability

- 23 Reliability/dependability
- 24 Durability/sturdiness/won't break
- 25 Longevity/lasts/holds up a long time
- 26 Stability
- 27 Other Miscellaneous Ruggedness/Durability/Dependability Mentions (List)

General Quality (Net)

- 28 Quality
- 29 Other General Quality Mentions (List)

Reviews/Recommendations (Net)

- 30 Reviews/customer reviews
- 31 Other Reviews/Recommendations Mentions (List)

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Appearance (Net)

32 Other Appearance Mentions (List)

Physical Attributes (Net)**Size/Shape (SubNet)**

33 Physical size

34 Small/compact

35 Other Size/Shape Mentions (List)

Miscellaneous Physical Attributes

36 Portability

37 Other Miscellaneous Physical Attributes Mentions (List)

General Performance/Functionality (Net)

38 Hard drive type

39 Temperature range

40 Specifications

41 Power consumption

42 Other General Performance/Functionality Mentions (List)

Brand Related (Net)

43 Brand/manufacturer (Unspec)

44 Brand reputation/from a reputable/reliable/trustworthy brand

45 Familiar/well known/name brand

46 Other Brand Related Mentions (List)

Service/Repair (Net)

47 Warranty/replacement/return policy

48 Other Service/Repair Mentions (List)

Price (Net)

49 Price/cost/affordability/good price (Unspec)

50 Value/price to size ratio

51 Other Price Mentions (List)

Miscellaneous

52 Size/how big it is (Unspec)

53 Capacity/amount of memory/storage space

54 Safety/security

55 Software/drivers

56 Performance

57 Noise level/quiet

58 Other Miscellaneous Mentions (List)

59 None/don't know/no answer

EXHIBIT J

Respid	LOI	Age	Gender	State	Region	Cell	q50	q55	q60	q65_1	q65_2	q65_3	q65_4	q65_5	q65_6	q70_1	q70_2	q70_3	q70_4	q70_5	q70_6	q70_7	q75	q250AB	q260/265_1	q260/265_2	q260/265_3
6	6	53	2	CA	W	1	1	2	2	0	1	0	0	0	0	1	0	0	0	0	0	0	7	2	31	36	
12	10	34	2	NV	W	2	1	1	3	1	0	0	0	0	0	0	0	0	0	1	0	0	3	1	24	27	36
17	10	24	2	MI	MW	2	1	1	3	1	0	0	0	0	0	1	0	0	0	0	0	0	8	1	5	26	15
25	6	31	2	ME	NE	2	1	1	2	0	1	0	1	0	0	1	0	0	0	0	0	0	5	3	73		
34	8	73	1	NY	NE	2	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	0	8	2	25	30	5
35	4	46	1	WA	W	2	1	1	2	0	1	0	0	0	0	0	0	0	1	0	0	0	8	3	76		
40	4	19	1	NY	NE	1	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	0	2	2	36		
42	8	55	1	TN	S	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	0	3	1	36	25	13
48	8	53	1	ME	NE	1	1	1	3	0	1	0	0	0	0	1	0	0	0	0	0	0	3	2	20	3	66
50	7	26	1	AZ	W	1	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	0	3	2	38	62	13
56	7	63	2	FL	S	1	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	0	3	1	45	9	11
60	3	42	1	AR	S	2	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	0	1	2	3	36	
66	15	30	2	NC	S	1	1	2	3	0	1	0	1	0	0	0	0	1	0	0	0	0	2	3	63	17	62
67	5	50	2	MA	NE	1	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	3	3	61		
81	7	42	2	KS	MW	1	1	1	3	0	1	0	0	0	0	1	0	0	0	0	0	0	8	3	69		
83	5	28	1	AZ	W	1	1	1	3	1	1	0	0	0	0	1	1	0	0	0	0	0	3	1	38	36	
86	8	30	2	OK	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	1	1	31	25	
88	11	61	2	AL	S	2	1	1	3	1	1	0	1	0	0	1	0	0	0	0	0	0	1	2	13	9	27
90	10	70	2	CA	W	1	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	12	31	44
94	7	38	2	PA	NE	1	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	3	2	12	3	41
97	4	39	1	NC	S	1	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	0	3	1	5		
99	8	44	1	CT	NE	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	2	3	68		
103	4	50	1	MD	S	1	1	1	3	1	0	0	0	0	0	0	0	1	1	0	0	0	2	1	31	36	
107	10	39	2	VA	S	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	31	33	38
110	9	65	1	OR	W	2	1	1	2	1	0	0	0	0	0	0	0	0	1	0	0	0	2	2	25	38	
114	3	35	2	NV	W	1	1	1	3	1	0	1	1	0	0	0	1	0	0	1	0	0	1	1	44		
125	12	54	2	MO	MW	1	1	1	2	0	0	0	1	0	0	0	0	0	0	1	0	0	3	2	30	36	
126	3	34	2	IL	MW	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	0	1	2	38		
142	8	28	2	NC	S	2	1	1	2	0	0	0	1	0	0	0	0	0	0	1	0	0	8	2	68		
146	6	69	1	FL	S	1	1	1	2	1	1	0	0	0	0	1	1	1	0	0	0	0	4	2	33	36	
147	4	44	2	GA	S	1	1	2	3	1	0	0	0	0	0	1	0	0	0	0	0	0	2	3	50	62	
148	7	37	2	AZ	W	2	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	0	4	2	44	42	
156	8	47	2	TN	S	2	1	1	2	1	0	0	1	0	0	1	0	0	0	0	0	0	2	2	3	15	
157	6	47	1	FL	S	1	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	0	2	2	68		
163	7	54	2	MI	MW	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	0	4	3	65	71	
166	8	32	1	PA	NE	1	1	1	3	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	40		
172	12	53	2	NJ	NE	2	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	0	6	1	3	13	36
173	5	59	2	CA	W	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	8	3	73	51	
184	10	61	1	UT	W	2	1	1	2	1	0	0	0	0	0	0	0	1	0	0	0	0	4	3	59		
187	12	59	2	MI	MW	2	1	1	3	0	1	0	0	0	0	0	1	0	0	0	0	0	4	3	66	67	
189	5	74	1	CA	W	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	8	3	3	36	
190	24	34	1	NY	NE	2	1	1	3	1	1	0	0	0	0	0	1	0	0	0	0	0	3	1	9	11	36
191	7	52	2	KY	S	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	3	3	74		
192	17	33	2	CA	W	2	1	1	3	1	1	1	1	0	0	0	0	0	0	1	0	0	1	1	25	12	36
199	4	46	2	IA	MW	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	0	2	2	40		
204	14	52	1	ME	NE	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	3	39	25
211	6	64	1	PA	NE	2	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	0	4	2	5	68	
213	5	54	1	FL	S	2	1	1	3	1	0	0	0	0	0	0	0	1	0	0	0	0	2	2	39	38	47
217	3	36	2	OK	S	2	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	0	3	3	75		
225	5	32	2	IL	MW	2	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	0	5	2	39		

227	13	75	2	NY	NE	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	3	3	73	55	
230	7	65	1	MI	MW	2	1	1	2	0	1	0	0	0	0	0	0	0	1	0	0	2	3	55		
245	4	28	1	NJ	NE	2	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	1	1	49		
248	9	42	2	CA	W	2	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	4	3	75	36	
251	13	57	2	MN	MW	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	1	3	62		
253	7	53	1	WV	S	2	1	1	3	1	0	0	0	0	0	1	0	0	0	0	0	2	2	12	1	2
258	8	61	2	PA	NE	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	1	3	73	69	
276	12	43	1	MO	MW	2	1	1	3	0	0	0	1	0	0	0	1	0	0	0	0	3	2	31	65	
282	7	29	2	KY	S	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	2	2	40		
287	3	29	1	MD	S	1	1	1	3	1	1	0	0	0	0	1	1	0	0	0	0	2	2	9	42	49
293	3	38	1	MA	NE	2	1	1	3	0	0	0	1	0	0	1	0	0	0	0	0	2	2	25	3	36
294	3	38	2	OH	MW	1	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	2	2	40		
305	5	54	1	IL	MW	1	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	4	4	36		
308	5	32	2	IA	MW	1	1	1	2	1	0	0	0	0	0	0	1	0	1	0	0	1	2	36	31	12
309	6	25	2	IN	MW	1	1	1	2	1	1	1	1	0	0	0	0	1	0	0	0	4	2	40		
310	6	37	1	NH	NE	2	1	1	3	0	0	0	1	0	0	0	1	0	0	0	0	2	2	40	66	69
315	9	33	2	WI	MW	1	1	1	3	1	1	0	0	0	0	1	0	0	0	0	0	1	1	12	49	26
321	8	36	1	CA	W	2	1	1	2	0	1	0	1	0	0	0	1	0	0	0	0	1	2	40		
323	12	47	1	CA	W	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	4	2	12	30	26
331	6	40	1	NY	NE	2	1	1	3	1	0	0	0	0	0	1	0	0	0	0	0	8	5	60		
340	12	39	1	TX	S	2	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	3	2	12	30	3
342	7	27	1	TX	S	1	1	1	3	1	1	0	1	0	0	0	1	0	0	1	1	0	1	2	5	36
346	8	41	1	OH	MW	1	1	1	2	1	0	0	0	0	0	0	0	0	0	1	0	2	3	64	62	52
347	5	36	1	PA	NE	1	1	1	2	0	1	0	1	0	0	1	0	0	0	0	0	1	2	9	12	5
360	7	48	2	OR	W	2	1	1	3	1	1	0	1	0	0	0	0	1	0	0	0	1	1	3	31	49
362	14	69	1	MI	MW	1	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	3	1	35		
364	6	27	2	MI	MW	2	1	1	3	0	0	1	1	0	0	0	1	0	0	0	0	1	2	12	53	
368	7	63	2	NY	NE	2	1	1	3	0	1	0	0	0	0	1	0	0	0	0	0	5	3	73	51	
381	5	47	2	TX	S	2	1	1	2	1	1	0	0	0	0	1	1	0	1	0	0	1	3	64		
389	11	51	2	GA	S	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	3	2	31	5	
398	11	30	2	NY	NE	2	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	1	3	51	60	
409	7	62	1	WI	MW	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	8	2	36	6	
410	12	32	2	CA	W	1	1	1	3	1	1	0	0	0	0	0	1	0	0	1	0	2	2	26		
423	4	32	2	KY	S	2	1	1	3	0	0	0	1	0	0	1	0	0	0	0	0	2	3	73	67	68
429	7	53	2	KS	MW	2	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	1	3	45	48	
452	32	24	2	WI	MW	1	1	2	3	0	0	0	1	0	0	0	0	0	1	0	0	5	2	31	36	
457	4	51	1	CA	W	1	1	1	2	0	1	0	0	0	0	1	1	0	0	0	0	8	5	71		
464	26	36	2	NC	S	1	1	1	3	0	0	0	1	0	0	1	0	0	0	0	0	1	2	12	43	49
465	12	35	1	FL	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	1	1	25		
468	4	56	1	MA	NE	2	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	1	3	75		
469	4	22	1	CA	W	2	1	1	3	0	0	0	1	0	0	1	1	1	1	1	0	1	1	6	26	
471	8	48	1	FL	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	2	1	30	36	
472	8	72	1	DE	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	2	5	63	56	
480	6	35	2	CA	W	1	1	1	3	0	1	0	0	0	0	1	1	0	0	0	0	1	2	65	4	
482	5	47	2	TX	S	1	1	1	3	0	1	1	1	0	0	0	0	1	0	0	0	5	1	1	36	
489	5	50	2	IL	MW	1	1	1	3	0	0	0	1	1	0	1	1	0	0	0	0	1	1	12	38	37
490	5	65	1	FL	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	1	3	69	66	
501	34	37	2	CA	W	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	1	2	10	37	45
507	6	75	1	TX	S	1	1	1	3	0	1	0	0	0	0	1	0	0	0	0	0	1	2	3		
508	7	32	2	IL	MW	1	1	1	3	1	1	1	1	0	0	1	1	1	1	1	0	1	1	12	25	31
517	6	27	1	IL	MW	1	1	1	2	0	1	0	0	0	0	1	0	1	0	1	0	2	3	8	37	56

518	5	40	1	IL	MW	1	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	3	2	40		
520	4	31	1	NY	NE	1	1	1	3	1	1	0	0	0	0	1	1	0	0	0	0	0	2	2	69	66	
525	32	36	1	VA	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	4	3	57		
532	11	52	1	UT	W	1	1	1	2	0	1	0	0	0	0	0	0	1	0	0	0	0	3	3	61		
533	3	27	1	OH	MW	1	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	0	1	3	31	69	
539	4	27	1	MD	S	1	1	1	2	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2	25	27	36
543	4	32	1	CA	W	1	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	0	2	2	17	49	
549	4	44	1	WV	S	2	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	0	1	1	37	30	12
557	13	55	1	FL	S	2	1	1	3	0	0	0	1	0	0	1	1	0	0	0	0	0	1	2	36	9	5
558	5	30	2	PA	NE	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	0	1	2	20	24	25
560	7	38	1	WI	MW	2	1	1	2	1	0	0	0	1	0	1	0	0	0	0	1	0	1	3	35	57	
564	6	73	1	FL	S	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	8	3	73	65	
566	8	35	2	TX	S	2	1	1	3	0	1	0	1	0	0	1	1	0	0	1	0	0	1	2	44	24	26
575	7	50	1	VA	S	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	0	3	3	73	65	
590	7	25	1	PA	NE	2	1	1	2	0	0	1	1	0	0	0	1	1	0	0	0	0	1	2	13	36	
595	6	41	2	OH	MW	2	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	0	2	2	12	31	
596	4	59	1	NH	NE	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	5	3	73		
597	9	57	2	NY	NE	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	0	4	2	31	36	75
604	9	60	1	CA	W	2	1	1	3	1	0	0	0	0	0	1	0	0	0	0	0	0	3	2	30	25	3
605	11	77	1	IN	MW	2	1	1	2	0	1	1	0	0	0	1	1	0	0	0	0	0	1	5	63		
613	7	45	1	VA	S	2	1	1	3	1	1	0	0	0	0	1	0	0	0	0	0	0	2	2	27	31	25
614	5	57	2	PA	NE	2	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	0	2	2	26		
615	5	64	2	FL	S	2	1	2	2	1	0	0	0	0	0	0	0	0	1	0	0	0	1	2	48		
630	15	35	1	RI	NE	1	1	1	3	1	1	0	0	0	0	1	1	0	0	0	0	0	1	3	36	34	57
636	9	26	1	MN	MW	1	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	0	3	2	38	27	29
644	7	50	1	MO	MW	1	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	0	6	2	31		
648	7	48	1	PA	NE	1	1	1	2	0	1	0	0	0	0	0	0	0	1	0	0	0	1	3	61	39	36
649	5	58	1	AL	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	2	2	73	65	
656	59	34	1	PA	NE	2	1	1	2	0	0	0	1	0	0	0	0	0	0	1	0	0	3	3	68		
657	9	77	1	PA	NE	1	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	0	2	3	73		
661	4	60	1	CA	W	1	1	1	2	0	1	0	0	0	0	1	0	0	1	0	0	0	1	5	59		
666	6	60	1	IL	MW	1	1	1	3	1	0	0	0	0	0	0	0	1	0	0	0	0	3	2	3	36	
670	4	30	1	PA	NE	1	1	1	3	1	1	0	1	1	0	0	1	0	1	0	1	0	1	4	52		
672	6	58	1	MO	MW	1	1	1	3	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	38	47	
673	9	58	1	ME	NE	2	1	1	3	0	1	0	1	0	0	0	1	0	0	0	0	0	5	1	14	30	37
676	9	54	1	AZ	W	2	1	2	3	0	1	0	0	0	0	0	0	1	0	0	0	0	2	3	76		
677	6	45	1	WA	W	2	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	0	1	1	25	31	6
678	6	62	1	CA	W	2	1	1	3	0	0	0	1	0	0	0	1	0	0	0	0	0	3	3	75		
680	4	51	1	LA	S	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	5	3	69	66	
686	10	27	1	NY	NE	2	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	0	5	4	53	73	50
689	8	53	1	DE	S	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	1	2	36	31	
694	6	60	1	WV	S	2	1	1	2	1	1	0	1	0	0	1	0	0	0	0	0	0	1	2	27	3	
699	35	63	1	MI	MW	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	3	2	30	12	
712	4	74	1	SC	S	1	1	1	3	0	0	0	1	0	0	1	0	0	0	0	0	0	4	3	63		
716	8	62	1	NC	S	1	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	2	1	3	45	19
723	10	57	1	TX	S	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	0	3	2	5		
728	11	40	2	TX	S	1	1	1	3	1	0	0	0	0	0	0	1	0	0	0	0	0	1	2	25	26	
730	10	33	1	NJ	NE	1	1	1	2	1	1	0	0	0	0	1	1	0	0	0	1	0	1	3	72	65	75
732	7	32	2	CA	W	1	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	2	2	36		
750	9	59	1	NH	NE	1	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	0	1	2	14	73	38
758	5	18	2	FL	S	1	1	1	2	1	0	0	0	0	0	0	0	1	0	0	0	0	2	2	24	29	

765	5	20	2	FL	S	1	1	1	3	0	0	0	1	0	0	0	0	1	0	0	0	3	1	25	38	
776	5	50	1	TN	S	2	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	3	4	36	12	
777	8	51	1	NH	NE	2	1	1	3	0	0	0	1	0	0	0	0	0	0	1	0	1	2	65		
782	31	85	1	CA	W	2	1	1	2	1	1	0	0	0	0	0	1	1	0	0	0	3	2	14	6	4
785	15	65	1	FL	S	2	1	1	2	0	1	0	0	0	0	0	1	0	1	0	1	0	3	36		
786	7	59	1	OH	MW	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	1	4	51		
796	9	52	1	TX	S	2	1	1	2	1	1	1	0	0	0	1	1	0	1	0	0	1	2	3	36	
803	5	43	1	DE	S	2	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	1	1	30	12	38
806	6	47	1	MI	MW	2	1	1	3	1	0	0	0	0	0	1	0	0	0	0	0	1	2	25	31	5
808	5	56	1	TX	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	2	2	27		
813	5	25	1	IN	MW	2	1	1	3	0	1	0	1	0	0	0	1	0	0	0	0	3	1	9	27	36
814	7	30	1	CA	W	2	1	1	3	1	1	0	0	0	0	0	1	1	0	0	0	1	1	25	12	9
823	10	43	2	WA	W	1	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	1	3	73	67	
835	8	63	1	CA	W	1	1	1	2	1	1	0	0	0	0	1	1	1	1	1	0	1	3	74		
837	13	20	2	NY	NE	2	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	3	2	44		
846	6	61	1	NH	NE	1	1	1	3	1	1	0	0	0	0	1	0	1	0	0	0	3	3	3	68	17
849	3	27	2	NY	NE	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	2	3	73	64	
855	12	21	1	MO	MW	1	1	1	3	0	1	0	0	0	0	0	0	1	0	0	0	1	3	68	56	
856	4	41	1	LA	S	1	1	1	2	1	1	0	0	0	0	1	0	0	1	0	0	1	1	3	31	36
857	11	68	1	NY	NE	1	1	1	2	1	0	0	0	0	0	1	1	0	0	0	0	3	2	5	4	31
864	6	58	1	NJ	NE	1	1	1	2	1	0	0	0	0	0	0	0	0	1	0	0	1	2	73		
876	12	21	2	AZ	W	2	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	6	1	26	36	
879	27	58	2	NY	NE	2	1	2	2	0	1	0	1	0	0	0	0	1	1	0	0	1	4	59		
885	5	36	1	MN	MW	2	1	1	2	0	1	0	0	0	0	1	1	1	0	0	0	1	2	31	66	5
886	5	32	2	CA	W	1	1	1	3	1	1	1	0	0	0	1	1	0	0	0	0	1	1	25		
889	5	32	2	GA	S	2	1	2	2	0	0	0	1	0	0	0	0	0	1	0	0	2	3	75	65	
891	6	48	1	NY	NE	2	1	1	3	0	1	0	0	0	0	1	0	0	0	0	0	2	3	66	56	
895	4	32	2	FL	S	1	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	1	1	29		
898	6	41	2	TX	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	8	2	36		
900	4	25	2	AZ	W	2	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	2	2	13		
901	9	28	2	AZ	W	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	1	1	30		
906	5	44	2	NY	NE	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	2	2	13	1	
922	3	27	1	SC	S	2	1	1	3	1	1	0	0	0	0	1	0	0	0	1	0	2	2	2	18	
925	7	39	1	TX	S	2	1	1	3	1	1	0	0	0	0	1	0	0	0	0	0	2	1	39	13	
927	4	42	2	AZ	W	2	1	1	3	0	0	0	1	0	0	0	0	1	0	0	0	5	3	73		
934	5	38	1	MD	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	3	2	27	36	8
937	5	41	2	GA	S	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	1	3	3		
939	10	48	2	WA	W	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	2	1	3	36	
940	7	42	1	CA	W	1	1	1	2	1	1	0	1	0	0	0	0	0	1	0	0	2	1	14		
947	6	34	1	NY	NE	1	1	1	2	0	0	0	1	1	0	0	1	0	1	1	0	1	2	37	50	
948	6	23	1	NV	W	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	2	2	29	59	
952	7	38	2	CO	W	1	1	1	2	0	1	0	0	0	0	0	1	1	0	0	0	2	3	63	58	
955	11	45	2	CA	W	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	2	3	68	71	66
958	4	37	2	MI	MW	1	1	2	2	1	0	0	0	0	0	1	0	0	0	0	0	2	2	36		
961	7	44	1	FL	S	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	2	2	13	27	3
965	11	56	1	AL	S	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	4	2	12	9	46
967	3	37	1	TX	S	1	1	1	2	1	0	0	0	0	0	0	0	1	0	0	0	1	2	37		
975	22	58	2	NY	NE	2	1	1	2	0	1	0	0	0	0	0	0	0	1	0	0	3	1	13	36	
976	8	39	1	VA	S	1	1	1	3	1	0	1	1	0	0	1	0	1	0	0	0	1	2	42	5	65
982	7	35	1	CA	W	1	1	1	2	1	1	0	0	0	0	0	1	0	1	0	1	3	63	56		
986	9	61	1	CO	W	1	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	2	3	71	60	57

989	3	25	2	MI	MW	1	1	1	2	0	1	0	0	0	0	0	0	1	0	0	0	3	2	36		
1001	5	72	1	NJ	NE	2	1	2	2	0	1	0	0	0	0	1	0	0	0	0	0	7	2	75	36	
1017	6	37	2	AL	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	2	3	75	65	
1021	6	25	2	MN	MW	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	3	2	35	13	
1024	11	29	2	OR	W	2	1	1	3	1	0	0	0	0	0	0	0	1	0	0	0	6	4	64	60	
1027	7	36	1	PA	NE	2	1	1	3	1	0	0	0	0	0	0	1	0	0	0	0	3	3	5	75	
1028	13	33	1	GA	S	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	6	1	37	14	
1033	13	42	2	MD	S	2	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	1	1	5	27	12
1051	8	38	2	CA	W	2	1	1	2	1	0	0	1	0	0	1	0	0	0	0	0	4	2	25	31	36
1063	4	37	1	CA	W	2	1	1	2	0	1	0	0	0	0	0	0	0	1	0	0	8	5	59		
1066	20	39	2	AL	S	1	1	1	3	0	0	0	1	0	0	1	0	0	0	0	0	6	1	13	49	
1069	9	52	2	NJ	NE	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	1	2	5	7	46
1075	9	69	1	TX	S	1	1	1	3	0	1	0	1	0	0	1	0	1	0	0	0	3	2	37	73	
1086	12	51	1	UT	W	2	1	1	3	1	1	0	0	0	0	1	1	0	0	0	0	1	1	48		
1088	6	35	2	NY	NE	1	1	1	3	1	1	0	1	0	0	0	0	0	1	1	0	1	2	13	69	
1090	9	35	2	NY	NE	1	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	2	1	29	36	
1099	5	24	1	NY	NE	1	1	1	3	1	0	0	1	0	0	1	1	0	0	0	0	1	2	25	9	30
1107	9	50	2	AZ	W	1	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	3	4	50		
1109	7	40	2	MS	S	1	1	1	3	0	0	0	1	0	0	0	0	0	0	1	0	1	1	7	46	
1112	7	30	1	OK	S	1	1	1	3	0	1	1	0	0	0	0	1	0	1	0	0	1	2	6	26	2
1113	5	39	1	CA	W	1	1	1	3	1	1	0	0	0	0	0	1	0	1	1	0	1	3	63	56	
1124	35	35	1	AL	S	2	1	1	3	0	1	1	1	0	0	1	1	0	0	0	0	2	1	48		
1127	5	50	1	OH	MW	2	1	1	3	0	0	0	1	0	0	0	0	1	0	0	0	3	2	24	25	
1129	10	62	2	FL	S	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	3	3	71		
1134	6	37	2	PA	NE	2	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	1	3	12		
1168	10	20	1	NC	S	2	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	2	2	5	36	
1174	6	43	1	DE	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	3	2	27	28	
1181	8	53	2	OH	MW	1	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	1	2	25	43	
1210	13	65	1	LA	S	1	1	1	3	0	1	0	0	0	0	1	0	0	0	0	0	1	3	69	38	
1231	10	39	2	MI	MW	2	1	1	3	0	0	0	1	1	0	1	0	0	0	0	1	1	2	3	36	
1233	5	26	2	FL	S	1	1	2	2	0	0	0	1	0	0	0	0	0	1	0	0	2	2	13	37	
1242	6	62	2	TX	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	2	5	62		
1272	7	42	2	TX	S	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	3	1	38		
1283	6	37	1	SC	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	2	1	13	36	
1284	4	44	2	CT	NE	2	1	2	2	0	1	0	0	0	0	0	0	1	0	0	0	2	2	39	25	
1293	36	70	1	AL	S	2	1	1	3	1	1	0	1	0	0	0	1	0	1	0	0	1	2	3	4	25
1313	9	46	1	KY	S	1	1	1	3	1	1	0	0	0	0	0	0	0	1	0	0	2	1	12	5	20
1334	10	67	1	TX	S	2	1	1	3	0	1	0	0	0	0	1	0	0	0	0	0	6	4	51		
1339	6	53	1	AL	S	1	1	1	3	1	0	0	0	0	0	0	1	0	0	0	0	2	3	69		
1340	13	68	2	FL	S	2	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	8	3	68		
1344	8	35	2	TN	S	2	1	1	3	0	1	0	1	0	0	0	1	0	1	0	0	2	2	67		
1346	9	76	1	FL	S	1	1	1	2	1	1	0	0	0	0	0	1	0	1	0	0	1	4	63		
1366	10	30	2	IL	MW	1	1	1	2	0	1	0	1	0	0	1	0	0	0	0	0	7	2	39	37	13
1367	9	22	1	FL	S	2	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	3	2	49	27	3
1368	4	37	1	NY	NE	2	1	1	3	1	1	0	1	0	0	0	1	0	1	0	0	2	2	75		
1372	4	41	2	IN	MW	1	1	1	3	0	0	0	1	0	0	0	0	0	0	1	0	2	1	40		
1374	21	34	1	MO	MW	2	1	2	2	1	1	0	0	0	0	1	0	0	0	0	0	1	4	67	59	
1375	5	41	1	TX	S	2	1	1	3	1	1	0	1	0	0	0	1	0	1	0	0	1	2	25	31	26
1391	4	27	2	MI	MW	1	1	1	3	0	0	0	1	0	0	0	1	1	0	0	0	2	4	59		
1396	5	56	2	IL	MW	1	1	1	2	0	1	0	0	0	0	0	0	1	0	0	0	3	3	65	73	
1404	5	60	2	NY	NE	1	1	2	2	1	0	0	0	0	0	0	0	1	0	0	0	2	2	73		

1409	5	45	2	UT	W	2	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	6	2	39	12		
1435	4	50	1	FL	S	1	1	1	2	1	0	0	0	0	0	0	0	0	1	0	0	3	2	31	47		
1443	4	35	1	IA	MW	1	1	1	3	1	1	0	0	0	0	1	1	1	0	0	0	1	2	30			
1449	5	47	1	OH	MW	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	2	3	73			
1472	6	42	2	MI	MW	1	1	1	2	1	1	0	0	1	0	1	0	0	1	0	0	1	1	36			
1473	5	42	1	NY	NE	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	4	3	68	36		
1480	4	35	2	NE	MW	1	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	2	2	5	16	42	
1483	16	30	2	VA	S	2	1	2	2	0	0	0	1	0	0	0	0	1	0	0	0	4	3	62	55		
1507	5	37	2	VA	S	1	1	1	3	0	1	1	0	0	0	1	0	0	0	1	1	0	1	2	6	14	37
1511	4	28	2	MI	MW	2	1	1	3	0	0	1	1	0	0	0	0	0	1	1	0	2	2	12	10	5	
1512	3	39	2	FL	S	1	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	3	3	70	55		
1527	4	36	1	GA	S	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	2	2	70	40		
1531	5	25	2	NY	NE	2	1	1	3	1	1	0	0	0	0	0	1	0	1	0	0	1	3	68			
1538	7	51	2	TX	S	2	1	1	2	1	1	0	0	0	0	0	0	1	0	0	0	2	2	12	36		
1539	3	30	2	WI	MW	2	1	1	2	1	1	0	0	0	0	0	0	0	0	1	0	3	2	24			
1549	4	26	1	WI	MW	2	1	1	2	1	1	0	0	0	0	0	0	1	1	0	0	1	1	31	25		
1550	5	63	1	MA	NE	2	1	1	2	1	0	0	0	0	0	0	0	1	0	0	0	2	2	37	32		
1560	5	29	2	FL	S	2	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	3	2	73	36		
1564	6	38	1	MA	NE	2	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	3	3	61			
1568	5	22	1	CA	W	2	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	2	3	27	67		
1570	5	40	2	NY	NE	2	1	2	2	1	0	0	0	0	0	0	1	0	0	0	0	1	2	28	36		
1580	6	60	1	AR	S	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	1	1	36	15		
1582	30	62	2	NY	NE	1	1	1	3	0	0	0	1	0	0	1	0	0	0	0	0	2	2	13	36	6	
1592	5	47	2	NC	S	1	1	1	2	1	1	0	0	0	0	1	0	0	0	1	0	4	1	3	12		
1594	5	45	1	IN	MW	1	1	1	3	1	1	0	0	0	0	1	0	0	0	0	0	1	4	54	57		
1596	18	42	2	MI	MW	1	1	2	3	1	1	1	1	0	0	0	1	0	0	0	0	1	3	69	73		
1601	7	39	1	MI	MW	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	2	1	36	16		
1605	4	63	1	SC	S	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	3	2	31			
1608	14	48	1	WA	W	1	1	1	2	1	0	0	0	0	0	0	0	0	1	0	0	1	2	28	9	21	
1620	8	39	1	PA	NE	1	1	1	2	1	1	0	0	0	0	0	1	0	1	0	0	2	1	30			
1644	8	44	2	LA	S	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	1	2	3	12		
1656	6	34	2	TX	S	1	1	1	2	0	0	1	1	0	0	1	1	0	0	0	0	1	2	29			
1662	7	45	2	LA	S	1	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	2	1	3	41	36	
1669	15	51	2	MA	NE	2	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	2	1	3	37	14	
1675	10	28	2	MN	MW	1	1	2	2	1	1	0	0	0	0	0	1	0	1	0	0	6	4	62			
1681	7	35	2	TX	S	1	1	1	3	0	0	1	1	0	0	0	0	1	0	0	0	2	1	37	15		
1697	6	65	2	FL	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	6	3	75	51		
1710	7	37	2	NJ	NE	2	1	1	3	0	1	0	1	0	0	0	0	0	1	1	0	1	1	27	38		
1712	10	69	2	MI	MW	2	1	2	2	1	0	0	0	0	0	0	0	0	0	1	0	5	3	36	74		
1713	14	31	2	SC	S	2	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	1	1	13			
1727	4	30	2	PA	NE	1	1	1	3	0	0	0	1	0	0	0	1	0	0	0	0	2	2	48			
1728	4	18	2	CT	NE	1	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	3	2	37	17	21	
1734	10	38	2	NY	NE	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	4	2	13	36	23	
1736	4	28	2	MD	S	1	1	1	2	1	1	0	1	0	0	1	0	0	0	0	0	2	1	12	21		
1740	9	50	2	NY	NE	1	1	1	2	0	1	0	0	0	0	0	0	1	0	0	0	2	2	12	31	1	
1742	5	28	2	CA	W	1	1	1	3	0	0	0	1	0	0	1	0	0	0	0	0	3	2	25	30		
1749	11	56	2	AR	S	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	8	3	73	35		
1754	21	28	2	NC	S	2	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	5	3	66			
1769	3	20	2	NC	S	1	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	3	1	25	31	5	
1773	5	36	2	PA	NE	1	1	1	2	0	0	0	1	0	0	0	0	0	0	1	0	2	1	13	49	46	
1776	4	39	2	CT	NE	1	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	2	2	31	27	44	

1783	11	56	2	NC	S	2	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	3	1	36	15	
1784	3	26	2	NY	NE	2	1	1	3	1	1	1	1	0	0	0	1	0	0	0	0	1	1	29	24	
1785	6	57	2	WV	S	2	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	4	1	29	33	35
1799	4	44	2	PA	NE	2	1	1	2	0	1	0	0	0	0	0	0	0	1	0	0	2	1	25	13	
1817	8	38	1	VA	S	2	1	1	3	0	1	0	1	0	0	1	0	1	0	0	0	2	1	12	49	10
1841	6	69	2	SD	MW	2	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	1	3	73	66	
1842	9	61	2	OH	MW	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	2	2	13	36	8
1851	6	70	1	IL	MW	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	7	5	60		
1855	8	67	1	FL	S	2	1	1	3	1	1	0	0	0	0	1	0	0	0	0	1	0	8	2	24	4
1861	6	49	2	AR	S	2	1	2	2	1	0	0	0	0	0	0	1	0	0	0	0	3	3	66		
1867	3	29	1	NJ	NE	2	1	1	2	0	1	0	1	0	0	0	0	0	1	1	0	2	1	38		
1869	4	37	2	OR	W	2	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	2	5	55		
1874	12	54	1	NV	W	1	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	2	2	36	3	
1883	8	54	1	MN	MW	2	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	3	1	24	39	
1917	8	66	1	NY	NE	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	8	3	75		
1926	9	76	1	GA	S	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	2	2	43	29	49
1927	13	21	2	CA	W	1	1	1	3	0	0	0	1	0	0	0	1	0	0	0	0	3	3	62	55	
1935	3	45	2	MN	MW	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	1	2	46	30	
1936	5	36	1	MI	MW	1	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	3	3	66		
1939	17	43	1	OH	MW	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	1	1	13	26	58
1943	7	29	2	NY	NE	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	6	2	4		
1944	7	45	2	NJ	NE	1	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	3	2	37	5	
1960	5	65	1	OH	MW	1	1	1	2	1	0	0	1	0	0	1	0	0	0	0	1	0	4	62		
1977	5	42	2	OH	MW	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	4	2	25	65	
2005	8	80	2	NV	W	1	1	2	2	1	0	0	0	0	0	1	0	0	0	0	0	1	2	11	15	
2011	4	62	1	TN	S	2	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	1	1	31	27	
2013	6	71	1	WI	MW	2	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	3	1	25	48	
2018	7	68	1	FL	S	2	1	1	2	1	0	0	1	0	0	0	1	0	0	1	0	4	2	73	55	
2022	15	66	1	CA	W	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	6	1	12	9	31
2025	9	76	1	WA	W	2	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	2	3	65		
2028	20	50	2	IL	MW	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	3	1	15	36	26
2057	6	53	2	PA	NE	2	1	1	2	1	0	0	1	0	0	1	0	0	0	0	0	1	1	44	22	
2079	3	31	2	MA	NE	2	1	1	3	1	1	0	0	0	0	1	0	0	0	1	0	1	3	68		
2081	11	74	2	MN	MW	2	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	1	1	37	13	8
2082	12	53	2	MO	MW	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	1	1	36	49	
2087	4	27	2	NY	NE	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	2	3	71		
2102	6	53	2	WA	W	2	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	2	2	36	30	
2106	10	50	2	MN	MW	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	2	1	14	44	45
2113	3	27	2	UT	W	2	1	1	2	0	0	0	1	0	0	0	1	0	0	0	0	2	3	40	59	
2117	23	60	2	TX	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	4	2	36	45	
2133	5	46	2	PA	NE	2	1	2	2	0	0	0	1	0	0	0	1	0	0	0	0	2	2	25	70	
2143	4	22	2	IL	MW	2	1	1	3	0	0	0	1	0	0	1	0	0	0	0	0	2	2	40	73	
2153	6	55	2	FL	S	1	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	3	1	27	31	13
2178	14	30	2	VA	S	1	1	1	2	1	0	0	1	0	0	0	0	0	1	0	0	3	2	40		
2181	5	51	2	FL	S	1	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	3	3	40	68	
2202	6	50	2	MO	MW	1	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	4	2	25		
2205	7	35	2	TX	S	1	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	5	2	3	36	42
2213	13	72	2	WA	W	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	1	3	73	75	
2221	6	37	2	CA	W	2	1	2	3	0	0	0	1	0	0	0	0	0	1	0	0	2	2	74		
2225	4	25	2	TX	S	2	1	1	2	1	0	0	0	0	0	0	0	0	0	1	0	1	1	27		
2234	4	36	2	OK	S	2	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	1	2	25	31	12

2239	3	25	2	OK	S	2	1	1	3	0	0	0	1	0	0	0	0	0	0	0	0	1	2	38		
2246	6	21	2	HI	W	2	1	2	3	0	0	0	1	0	0	0	0	1	0	0	0	3	2	5	16	15
2258	5	34	2	AL	S	2	1	1	3	0	0	0	1	0	0	0	0	0	0	1	0	0	2	40	65	
2268	3	30	2	CA	W	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	3	3	40	62	
2272	5	34	2	MO	MW	2	1	1	3	1	0	0	0	0	0	0	1	0	0	0	0	4	3	62	13	51
2273	3	36	2	WV	S	2	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	0	1	3	50	
2280	4	35	2	MN	MW	2	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	0	2	2	31	36
2281	9	60	2	AZ	W	1	1	2	2	1	0	0	0	0	0	0	1	0	0	0	0	0	1	2	25	31
2290	3	35	2	AZ	W	2	1	1	3	0	0	0	1	0	0	0	0	1	0	0	0	0	2	2	31	
2320	3	49	2	PA	NE	1	1	1	2	0	0	0	1	0	0	0	0	0	0	1	0	0	2	3	68	
2321	13	61	1	CA	W	1	1	1	2	0	0	0	1	1	0	1	0	0	0	0	0	0	2	2	36	13
2331	11	56	1	IL	MW	1	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	0	4	2	25	64
2346	8	68	1	NC	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	2	4	64	
2359	5	68	1	AR	S	1	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2	31	12
2365	34	67	1	DE	S	1	1	1	2	1	1	1	1	0	0	1	1	1	0	0	0	0	1	2	37	20
2366	7	79	1	CO	W	1	1	1	2	0	0	0	1	0	0	1	0	0	0	0	0	0	4	5	63	
2378	5	24	2	NC	S	1	1	1	2	0	1	0	0	0	0	0	0	1	0	0	0	0	2	3	69	
2381	10	71	1	MD	S	2	1	1	3	0	1	0	0	0	0	0	0	1	0	0	0	0	6	5	63	
2388	4	43	2	IL	MW	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0	0	0	2	2	12	31
2390	8	56	2	OH	MW	1	1	1	3	0	0	0	1	0	0	0	0	1	0	0	0	0	2	1	30	36
2391	6	30	2	GA	S	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	3	3	64	
2402	5	70	2	NC	S	1	1	2	2	0	0	0	1	0	0	1	0	0	0	0	0	0	4	2	39	28
2416	7	56	2	PA	NE	1	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	0	2	2	5	16
2417	7	44	2	IN	MW	1	1	1	3	0	1	0	0	0	0	0	0	1	0	0	0	0	4	3	61	70
2433	26	38	2	KY	S	1	1	1	3	0	0	1	1	0	0	1	1	1	0	1	0	0	1	2	5	41
2444	11	34	2	NC	S	1	1	2	3	1	0	0	0	0	0	0	0	0	1	0	0	0	4	5	5	46
2447	5	38	2	LA	S	1	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	0	2	1	13	37
2462	6	59	1	FL	S	2	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	0	3	2	13	
2463	6	42	1	CA	W	2	1	1	2	1	1	0	0	0	0	0	1	0	0	0	0	0	1	1	30	34
2464	15	62	1	TX	S	2	1	1	2	1	1	0	1	0	0	1	1	0	0	0	0	0	3	3	55	
2466	4	31	1	NC	S	1	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	0	3	1	25	
2468	14	31	1	WA	W	1	1	1	3	1	1	0	1	0	0	0	1	0	1	0	0	0	1	1	40	
2469	11	54	1	FL	S	1	1	1	3	1	1	0	0	0	0	1	0	0	0	0	0	0	3	2	69	
2471	5	58	1	NY	NE	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	4	3	59	56
2473	4	59	1	IN	MW	1	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	5	3	59	
2502	8	48	1	NY	NE	2	1	1	3	0	0	0	1	0	0	0	0	0	0	1	0	0	5	2	59	62
2508	8	50	1	MD	S	2	1	1	3	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	36	31
2513	12	47	2	NY	NE	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	3	3	12	9
2522	6	25	2	VA	S	2	1	2	2	1	0	0	0	0	0	0	1	0	0	0	0	0	2	3	40	59
2526	4	26	2	TX	S	2	1	2	2	1	0	0	0	0	0	0	1	0	0	0	0	0	1	2	3	
2530	5	58	2	NC	S	2	1	1	2	0	1	0	0	0	0	0	0	0	1	0	0	0	2	4	62	45
2536	48	56	2	NC	S	2	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	0	3	3	65	
2543	10	69	2	NC	S	2	1	1	2	1	0	0	0	0	0	0	0	0	1	0	0	0	2	2	36	7
2547	4	61	1	CA	W	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	5	3	69	
2568	6	63	1	CA	W	1	1	1	3	0	1	0	0	0	0	0	0	0	0	1	0	0	2	3	71	
2580	4	60	1	FL	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	1	1	25	12
2584	6	64	1	OK	S	2	1	1	2	1	1	0	0	0	0	1	0	1	0	0	0	0	3	1	8	13
2607	9	52	1	NY	NE	1	1	1	3	1	1	0	0	0	0	1	0	1	0	0	0	0	1	2	36	72
2608	6	24	2	MD	S	2	1	1	2	1	1	0	0	0	0	0	1	0	0	0	0	0	2	2	37	4
2616	6	50	2	FL	S	2	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	0	2	5	60	
2634	7	33	1	FL	S	1	1	1	2	1	1	0	0	0	0	0	1	0	0	0	1	0	2	3	37	68

2635	5	56	1	TX	S	1	1	1	3	0	1	0	0	0	0	1	0	0	0	0	0	2	5	61	64		
2640	22	52	2	GA	S	1	1	1	2	0	0	0	1	0	0	0	0	1	0	0	0	3	2	38	37	29	
2645	5	27	2	FL	S	2	1	1	3	0	1	0	1	0	0	1	0	0	0	0	0	2	3	68	71	48	
2650	6	36	2	GA	S	1	1	2	3	1	0	0	0	0	0	0	0	1	0	0	0	2	2	36			
2664	8	41	2	FL	S	1	1	1	2	1	1	0	0	0	0	0	0	1	1	0	0	2	1	36	26	47	
2675	5	66	1	TX	S	2	1	1	3	1	0	0	0	0	0	0	1	0	0	0	0	1	3	75			
2678	7	58	1	FL	S	2	1	1	2	0	1	0	0	0	0	1	0	0	0	0	0	3	3	66	75		
2681	4	71	1	FL	S	2	1	1	3	0	1	0	0	1	0	1	0	0	0	0	1	0	3	3	73		
2688	4	30	1	TX	S	2	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	5	1	30	36		
2690	7	68	1	OH	MW	2	1	1	2	1	0	0	0	0	0	0	1	0	1	0	0	3	1	25			
2700	5	47	1	OK	S	2	1	1	2	0	1	0	1	0	0	1	0	0	0	1	0	1	1	36			
2703	6	48	1	PA	NE	2	1	1	3	1	0	0	0	0	0	1	0	0	0	0	0	1	2	30			
2714	3	50	1	FL	S	1	1	1	2	0	1	0	0	0	0	0	0	0	1	0	0	3	2	12	49		
2722	6	34	1	IL	MW	1	1	1	3	1	1	0	1	0	0	0	1	1	1	0	0	2	2	40			
2732	3	35	1	NY	NE	1	1	1	3	1	1	0	0	0	0	1	0	1	0	1	0	1	2	37	5	14	
2760	7	42	1	CA	W	1	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	2	4	59			
2763	7	60	1	MO	MW	1	1	1	3	1	0	0	0	0	0	0	0	1	0	0	0	8	4	62			
2768	8	75	1	NY	NE	1	1	1	2	0	1	0	0	0	0	0	0	0	1	0	0	1	4	55			
2770	8	46	1	MN	MW	2	1	1	2	0	0	0	1	0	0	0	0	0	0	1	0	2	2	12	9		
2776	44	32	2	OH	MW	1	1	1	2	1	1	0	0	0	0	1	0	1	0	0	0	1	2	20	13	39	
2780	5	48	2	FL	S	1	1	1	2	0	0	0	1	0	0	0	0	0	1	0	0	1	1	20	49		
2789	9	66	2	KY	S	1	1	1	2	0	0	0	1	0	0	0	0	0	0	1	0	2	1	26			
2798	6	21	2	IN	MW	1	1	2	2	0	0	0	1	0	0	1	0	0	0	0	0	8	3	75			

q260/265_4	q260/265_5	q260/265_6	q260/265_7	q270/275_1	q270/275_2	q270/275_3	q270/275_4	q270/275_5	q270/275_6	q280/285_1	q280/285_2	q280/285_3	q280/285_4	q280/285_5	q280/285_6
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				7	17					53	36	49			
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				9	20					10	53				
46				16	21					49	23	52			
				5	1					50	43				
24	3	7		18	19	21				56	43	55			
				16						52	49				
				3	1	7				36	53	32			
				16	22					53	49				
				16						59					
				17						23	54				
				17						49	3	53			
				21						52	3				
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				17						59					
				16						3					
				14						53					
				1	2					49	40				
				19						44					
				15						24	10				
				12						58					
				18						53					
				20						53					
				16						34	43				
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				26						49	3				
				17	12					53	49	11			
				23						53	49				
				7						53	49				
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				16						1	3				
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		27				56						
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q280/285_7 q280/285_8

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